SOUTHERN TEXTILE BULLETIN

VOL. 42 | CHARLOTTE, N. C., JULY 7, 1932 | No. 19

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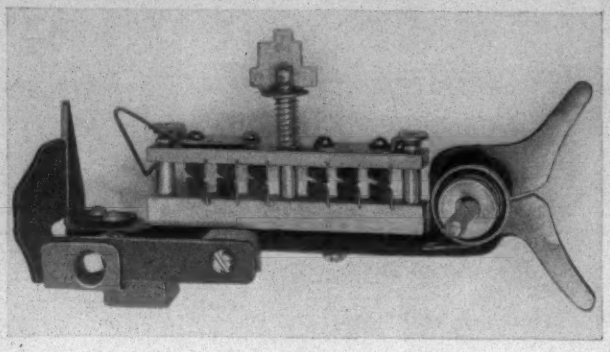

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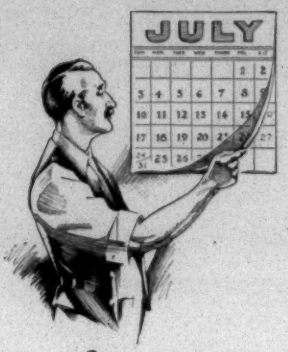

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SOUTHERN
TEXTILE BULLETIN

Published Every Thursday by Clark Publishing Company, 18 West Fourth Street, Charlotte, N. C. Subscription $2.00 Per Year in Advance. Entered as Second Class Mail Matter March 2, 1911, at Postoffice, Charlotte, N. C., Under Act of Congress, March 2, 1897

VOL. 42 CHARLOTTE, N. C., JULY 7, 1932 No. 19

Asbestos Textiles*

BY C. K. DILLINGHAM

Staff Manager, Sales Engineering Dept., Johns-Manville Corp., New York City.

ASBESTOS, that remarkable mineral born millions of years ago in the volcanic fires of Earth's creation and formed under the terrific pressures that were set up as the crust of our planet began to cool off, has, as you all know, scores and hundreds of uses. Perhaps one of its most interesting adaptations has been its manufacture into asbestos textiles.

It is not commonly known that the use of asbestos textiles dates far back into ancient times. It was originally known as amianthus cloth and was used by the ancient Greeks and Romans to wrap dead bodies, placed on the funeral pyre, in order to preserve the ashes of the body. It was referred to in many an ancient document as a rare and costly cloth, the funeral dress of kings. Marco Polo, in the thirteenth century, while traveling in Siberia, was shown cloth made from asbestos which the natives pointed to in wonder because it withstood the action of fire. Plutarch writes of his "perpetual lamp wick" made from Carpathian linen or asbestos.

Because of its ancient and modern place in the textile field, I believe some facts regarding asbestos and its adaptation in textile work will be of unusual interest. While asbetos in various forms occurs in all parts of the world, the general types in which textile manufacturers are interested are three in number, namely, chrysotile, represented by Canadian, Russian and some kinds of African; the iron free, also chrysotile, represented by Arizona, Australian and one type of African; and the African brown and blue acid-resisting fibers. As Canadian asbestos is truly representative of the largest group and is probably the most widely known, this paper, because of its limited scope, should be considered as dealing only with Canadian chrysotile asbestos unless otherwise noted.

The asbestos fiber occurs as veins in serpentine rock, varying in width from almost nothing up to a rare maximum of 6 inches. The fibers run across the vein so that the width of the vein is the length of fiber. Asbestos mining is in most cases really asbestos quarrying, as blasting is resorted to in order to loosen masses of rock in open pits after which the fiber is removed from the rock in varying ratios of about one ton of fiber to fifteen or twenty tone of material.

As soon as the blast has settled, the grading of the asbestos fiber begins. It is first divided into two main divisions, crude and mill fibers. The crude fiber is obtained by collecting the larger pieces of fiber shaken loose by the blast, and removing by hand the rock still clinging to it. It is then still further sorted according to length, but not with the degree of accuracy that is customary in the grading of cotton and wool, and is then packed in burlap bags and shipped to the point of consumption. The rest of the rock is then put through the mill at the mine, the rock crushed off, the fiber worked into a soft matted mass, screened, graded and packed as mill or milled fibers.

It is extremely difficult to grade or evaluate asbestos fiber as, with the exception of crude fiber, it is impossible to measure its length, and even if it were possible, the length of the fiber woud not tell the story. In order, however, that there may be some specification or standard applicable to the many grades of mill fiber, the various asbestos mines have adopted a standard screen test by which mill fiber is classified into its many grades. The standard equipment consists of three screens and a pan placed one on top the other. The top screen is ½-inch mesh, the second screen is No. 4 mesh, the third screen is No. 10 mesh, with the pan at the bottom. A pound of fiber is placed on the top screen, and the apparatus is shaken by a cam having 600 revolutions in 2 minutes. After the 2-minute shaking, the amounts of fiber remaining on each screen and in the pan are carefully weighed, and the results given in ounces. Thus a fiber which is classified as a 2-8-4-2 fiber means that, after this shaking test, 2 ounces of fiber will remain on the top screen, 8 ounces on the second, 4 ounces on the third, and 2 ounces in the pan. While the results obtained by this method show considerable variation, it is a roughly accurate method of grading fiber. In the lower grades it determines the value of the fiber more or less accurately, as it does indicate its cleanliness, but in the higher grades, it takes no account of a quality of asbestos which is extremely important in textiles, packings, filter fibers, and possibly high-grade papers and insulations, namely, the natural life and resiliency of the fiber itself. Therefore, in the selection of fibers for textile purposes, to all the mechanical quality tests must be added knowledge of the workability of the different asbestos fibers obtained only through long experience.

In general we may say that the various grades of crude fibers and the two or three top grades of mill fibers can be used for the production of asbestos textiles. Some asbestos yarns require all crude fiber, due to the severe service to which they are put, others are made from a mixture of crude and mill fibers, while some of the

*Paper presented at the Thirty-fifth Annual Meeting of the American Society for Testing Materials, at Atlantic City, N. J.

cheaper grades of yarn and wick can be produced almost entirely from mill fiber. When crude fiber is used, the lumps of fiber as received from the mine are crushed and freed from all remaining rock. It is then passed through a willow which in general consists of two revolving beaters for the purpose of opening and ffuffing up the fibers. As the mill fiber needs no further crushing, it is usually only fed through the willow. If crude and mill fiber are used they are usually mixed at the willow.

The next operation in the production of asbestos textiles is the mixing picker, and it is at this point that the grades or quality of the yarn is determined by the mixture of a certain quantity of vegetable fiber, usually cotton, with the asbestos. Cotton is used to reduce the cost of asbestos yarn to commercial limits. Its great carrying power makes it possible to produce a stronger asbestos yarn from lower-grade asbestos or from a higher-grade asbestos with less waste than without it, and as there is very little necessity for an all-asbestos yarn, varying amounts of cotton will be found in practically 98 per cent of asbestos textiles. The mixing picker used in asbestos is usually of the heavy Fearnaught type quite unlike the cotton picker or lapper.

In carding, spinning and twisting asbestos yarns special equipment of heavier, more rugged construction must be used than in the case of other textile fibers, but in designs and methods asbestos machines more nearly follow the woolen system than any other. It is quite common in the industry to use a breaker and finisher card hooked together by means of a so-called camel-back feed. The asbestos and cotton mixture is delivered to the breaker card by means of a feed box, automatically weighing out a predetermined amount of mix at set intervals. Asbestos roving without twist is commonly taken from the finisher card by means of a ring doffer, wipe roll and rub motion, although in the case of some of the finer yarns tape condensers replace the ring doffer and wipe roll.

The asbestos roving delivered by the card is spun into yarn by two methods, namely, mule and ring, both producing yarn by the same principle, that is by twisting the soft roving on its own axis, thereby binding the fibrous mass into a strong compact thread, where formerly it had very little cohesive strength. In the main, mule spinning is used to produce a softer, more pliable single yarn to be later twisted into a plied yarn while ring spinning is used to produce a harder twisted stronger yarn which can be used in the single on braiders and winders in packings, and in the weaving of fine cloths and tapes. Draft as understood in cotton spinning is not used.

The spun yarn is spooled up and prepared for the twister in the same manner as is commonly found in the manufacturing processes of other textile fibers. An asbestos yarn twister, with the exception of its size and weight, is of the same general type as used in cotton and wool. Asbestos yarns are twisted into ply yarns in the same manner as other yarns, with the addition that a large amount of asbestos yarn has one or more strands of brass or copper wire twisted with a varying number of asbestos plies into what is known as wire-inserted asbestos yarn. This name is derived from the fact that wire strands tend to twist towards the center of the yarn.

Asbestos yarns and roving are produced and sold by size or cut and not by diameter. The size or cut of the yarn means the number of 100-yard to the pound of the single or one-ply yarn. Thus a 10-cut yarn or roving will average 1,000 yards per pound. Although asbestos has been spun into yarns as fine as 70s the commercial sizes run from 8s to 20s, as there is very little call for the higher counts. With a few exceptions the count or cut jumps 200 yards at a time as for example 8s, 10s and 12s, because asbestos yarn due to its mineral raw material is recognized as varying considerably in yardage. Tolerances for 14s and finer are accepted as being plus or minus 100 yards, from the count and plus or minus 50 yards, for lower counts. It would therefore be rather difficult to determine intermediate cuts or counts as their yardages would at times overlap.

As ply yarns are made by twisting together two or more strands of single yarn whose yardage has already been determined, it is evident that the yardage of a ply yarn will be the yardage of the single yarn divided by the number of plies, less a certain amount for the contraction caused by the twist. Thus a 10-cut 2-ply yarn would have a yardage of 1,000 divided by 2 less 40 or approximately 460. As a rule, the yardage of a 2-ply yarn is about 46 per cent of the single ply. If wire is inserted in the yarn its weight also reduces the yardage of the ply yarn, as here again the size of the single-ply asbestos yarn is the governing factor. A wire-inserted asbestos yarn containing three plies of 10-cut yarn and 2 wires is known as a 10-cut 3-ply wire-inserted yarn and can be written as 10/3 and 2 or in common mill parlance 1032. If the asbestos strands are 10-cut yarn and no other specifications as to size and percentage of wire or weight of finished yarn have been especially agreed upon, the mill has made a good delivery.

The five generally recognized qualities or grades of asbestos yarns are outlined in the society's proposed revised Specifications for Tolerances and Test Methods for Asbestos Yarn (D 299—29)[1] as follows: Grade A-1, a minimum of 77 per cent asbestos; grade A, 80 to 85 per cent; grade AA, 90 to 92 per cent; grade AAA, 95 to 96 per cent; and grade AAAA, all asbestos with a trace usually about 1 per cent of foreign matter permitted. These grades are the result of years of experience in producing asbestos textile to meet all requirements of industry as cheaply as possible, and in addition to covering all necessary qualities enable the manufacturers to utilize in the lowest grades a part of the waste produced in the higher grades. The grade or quality of a wire-inserted asbestos yarn is determined by the grade of the asbestos strands in the yarn, no account whatever being taken of the wire. All tests are made with the wire removed.

A visitor to the weaving room of an asbestos textile mill would probably see the greatest collection of equipment ever brought together in a single textile department. Here asbestos textie fabrics are woven in widths varying from ½ to 124 inches in thicknesses from 0.015 to more than 1 inch in texture from 6 ends per inch to more than 100, and in weights from ½ pound per square yard to 6 pounds per square foot. For cloths, various of the common types of fly shuttle looms are used together with some special looms of heavier construction. Asbestos brake linings and asbestos tapes are woven on multiple-shuttle, narrow-fabric looms. Both creel and beam weaving are employed depending on circumstances. In cloths the plain and common twill weaves are the most usual while in brake linings various ply weaves are used. All sizes and grades of asbestos yarns are woven into fabrics.

Asbestos is commonly called fireproof, but a better term would be fire resistant. A sufficiently high temperature can eventually destroy almost everything known and asbestos is no exception. The breakdown of asbestos under heat depends entirely upon the loss of its water of hydration, of which chrysotile asbestos has an average of 14 per cent. The water of hydration begins to leave asbestos just above 600 degrees F. (315 degrees C.) but

(Continued on Page 20)

Faster Dyed Rayon and Cotton Goods *

BY PHILIP STOTT

E. I. du Pont de Nemours & Co.

THE phenomenal development of rayon as a popular fiber during the last fifteen years has naturally led to a vast amount of experimentation on the part of producers, converters and suppliers of dyestuffs and chemicals to exploit the possibilities of the comparatively new fiber to the ultimate. Development of production itself is reflected in undoubted greater uniformity of product than existed at the outset; in the development of machinery to make possible the production of novel forms of rayon such as narrow strips for decorative purposes and in the popular sheet form known as Cellophane. Such developments represent a decided forward step from the fine fragile web-like filaments originally produced with great difficulties.

Problems Which Confront Converter

However, in this paper we must concern ourselves only with problems which have confronted and which still confront the converter. The dyeing of rayon as a self fiber has presented the converter with a good many troublesome problems. The solution of these has been approached in many ways among which the greater uniformity of the product itself referred to above was a step in the right direction. Increasing knowledge of the dyestuffs involved and their affinity for the fiber under various dyeing conditions has also straightened out many difficulties. This phase has been made the subject of much research work and literature published not only by dyers but also by dyestuff suppliers. Colors selected for their level dyeing properties have been carefully evaluated and emphasized by the manufacturers. In some instances the dyestuff supplier has even developed entirely new lines of colors systematically synthesized to possess constitutionally as many desirable characteristics as possible, based on observations of the behavior of established colors.

As we all know, rayon has extraordinary affinity for most of the substantive colors, especially in dark shades. It is only reasonable that it should have, just as mercerized cotton has greater affinity than gray cotton. Therefore, when we start to consider the question of producing faster dyeings on cotton-rayon mixed goods we have first to consider this difference in the fibers themselves. Here we have a combination of fibers substantially of the same origin, but one of them treated chemically to change its entire structure, appearance and properties generally, and also having its affinity for color tremendously increased and yet unfortunately for everyone concerned it must substantially be dyed with the same class of dyestuffs. There is no question involved of animal and vegetable fibers which permit of the utilization of dyestuffs of entirely different characteristics to obtain desired results of solid shades and fastness. In the production of any reasonably solid shades on rayon-cotton material, therefore we must bear in mind that satisfactory results depend a great deal on: 1, the type of material; 2, the depth of shade; 3, selection of colors from the standpoint of their fastness and also their ability to produce solid effects; 4, suitable dyeing methods.

*Paper presented at recent meeting of the New York Section of American Association of Textile Chemists and Colorists.

Faster Colors in Terms of Fabrics

In view of this mass of published information (and unquestionably it could be supplemented by just as much that has not been published), it seems logical at this point to revert to the title of this paper and ask ourselves in what channels must our investigation for faster colors be directed? The much hackneyed term fastness has always been indefinite of interpretation and used indiscriminately at the slightest provocation. Fortunately for all concerned the tendency is away from generalities and a greater understanding of the specific nature and value of the term is now existent. Therefore, we can definitely interpret our desires for faster colors in terms of uses of fabric.

The more important cotton and rayon union fabrics can be grouped as follows: 1, ladies' dress goods; 2, draperies and curtain materials; 3, hosiery; 4, lining cloth; 5, pile fabrics.

Let us now attempt to interpret these fabrics in terms of major fastness requirements considering light, washing and perspiration as the three primary factors involved. Suppose we assign numbers to each in order of their importance so that 0 is not important, 1 is fairly important, 2 is quite important, 3 is very important. We then arrive at something like this classification:

	Light	Washing	Perspiration
Ladies' Dress Goods	2	2	1
Draperies, etc.	3	1	0
Hosiery	0	3	2
Lining Cloth	1	0	3
Pile Fabrics (Upholstery)	3	0	0

Thus out of five different fabrics we have light fastness as most important in two cases, accompanied in one case by no other requirement and in the other a mild washing requirement. Perspiration fastness predominates in one case, together with a measure of light fastness, while washing is primary in the fourth case with perspiration running second. Only in one instance (that of ladies' dress goods) do we find no zero ratings or a combination of all the fastness requirements.

Now with this picture before us we ought to be able to do some selecting of dyestuffs and dyeing methods. We must, however, pause long enough to consider the shades required which will naturally vary from Ecru to Navy Blue and Black. In fact, we will be confronted with this problem on all our various fabrics so it seems reasonable at this point to first give some thought to the various classes of dyestuffs which are available from point of view of fastness requirements and treat as a separate problem the question of dyeing method in relation to shade.

Groups of Colors

The actual colors themselves fall very easily into the following groups: 1, direct colors; 2, developed colors; 3, sulphur colors; 4, vat colors.

The direct colors permit of the simplest methods of application and can be sub-divided into groups of those exhibiting better than average fastness to washing, perspiration and light. In some cases the three fastness requirements are common to one color. For example, Pon-

tamine Fast Blue 4GL, Pontamine Fast Orange WS, Pontamine Fast Yellow NN to mention just a few. The developed colors as a class exhibit generally better fastness to washing and perspiration, though not necessarily to light. Sulphur colors are best to washing and perspiration while Vat colors generally offer the most attractive properties of fastness.

TENTATIVE SCHEDULE OF COLOR SELECTION

Reverting back to our classification of material expressed in terms of fastness we can now propose a tentative schedule for our selection of dyestuffs by interpreting the fastness requirements as color. A classification about as follows seem to be correct:

Ladies' Dress Goods	Developed Colors
	Direct Colors of selected general fastness
Draperies	Vat Colors
Hosiery	Developed Colors
	Sulphur Colors
	Direct Colors of selected fastness to washing
Linings	Developed Colors
	Direct Colors of selected fastness to perspiration
Pile Fabrics	Vat Colors

VAT COLOR DIFFICULTIES

You will notice that no alternative suggestions to the use of Vat Colors for draperies and pile fabrics have been offered. This has been done deliberately because I want to comment at this stage on the possibilities of their usage.

It is admittedly difficult to dye vat colors on rayon-cotton unions and get a solid shade. It is admittedly more difficult than by the use of direct or developed colors and it is still more difficult in heavy shades. On fabrics with a cotton back and rayon pile it is probably impossible but for drapery material with a cotton warp and rayon filling or even a not too pronounced rayon design it can be done in light and probably even up to medium shades. Owing to the lack of facilities for temperature control and the increased affinity of rayon for color in a comparatively strongly alkaline bath, dark or heavy shades cannot be dyed successfully. The goods should be dyed on the jig being careful to have as little tension as possible and a few vat colors suitable for this type of work are Ponsol Orange 4R Double Paste, Ponsol Pink B Double Paste, Ponsol Red BN Double Paste, Ponsol Blue GD Double Paste, Ponsol Yellow G Double Paste and others.

It appears, therefore, that vat colors have some possibilities, limited it is true by certain restrictions, but worthy nevertheless of consideration and experimentation, which point is particularly emphasized by the relatively long life of drapery materials and the like. The color, if vat dyed, would most probably outlive the fabric and this point is important in goods of this nature.

Failing the use of vat colors for reasons touched on above, the next best class of color to resort to is obviously the fastest to light direct colors. As with all direct colors there are many possibilities of variation in application methods to produce certain effects and I will touch on these later.

SULPHUR COLORS

First, let us say a word about Sulphur Colors. These generally possess very satisfactory fastness to washing and perspiration, but their application is attended by similar difficulties to those pertaining to vat colors. They must be dyed from an alkaline reduced vat and difficulties of obtaining solid effects are enhanced in anything but light shades. They would, according to our classification, only find possible use in the dyeing of hosiery and here we have two alternatives: Developed Colors and Direct Colors for selected fastness to washing. This brings us to a consideration of these last two possibilities of color selection.

It is a well known fact that the substantive colors offer more possibilities for variation in dyeing method to produce desired effects than any other known ciass of dyestuff suitable for the dyeing of rayon-cotton material. The variations may be in temperature, mordants and assistants, dyeing time and dyeing volume according to shade, type of fabric and so on. Inasmuch as developed colors—that is to say, those which are diazotized and developed on the fiber—fall into the substantive group, they can be considered at the same time as the direct colors. Let us go back once more to our chart of classification of material in terms of fastness and take up each fabric in turn.

LADIES' DRESS GOODS

The most important fastness requirements are light and washing but neither is of primary importance. Perspiration is to be considered also. We must also consider that this type of fabric is very often printed so that dischargeable colors are necessary. Obviously, developed colors offer the most attractive possibilities and such dyestffs as Pontamine Diazo Brown R, Diazo Blue 5GL, Diazo Yellow 2GL, Diazo Orange WD, and Diazo Scarlet A should be most satisfactory. As a secondary choice direct colors of rather better than average fastness could be selected and there are many of these which would be quite satisfactory.

DRAPERIES, HOSIERY, LININGS AND PILE FABRICS

Failing the use of vat colors which would be best beyond dispute within limits previously discussed, substantive dyestuffs of maximum light fastness should be employed. For example, Pontamine Fast Yellow NN, Light Orange 2G, Red 8BL, Blue 4GL and so on.

Fastness to washing is of prime importance in hosiery, therefore, in developed colors lies the first choice. Secondarily, selected direct colors are best to use paying some attention to those whose fastness is enhanced by after-treatment with formaldehyde or chrome and acetic acid.

Perspiration and bleeding into white when wet are the chief requirements. Developed Colors again present excellent possibilities with direct colors second selecting a similar line to those used for hosiery work.

PILE FABRICS

There seems to be no possibility for any other class of color than the fastest to light direct colors for this type of fabric. Dyestuffs similar to those mentioned under Draperies are satisfactory.

METHODS OF APPLICATION

While it is not within the province of this paper to discuss at any great length methods of application, it may be helpful to bring out a few major points if for no other purpose than to promote a discussion by the members present who have experienced the difficulties of the problem. As stated in the beginning, the literature is full of results of research and practical experience and all one can do is to benefit by such experience and experiment further under one's own conditions.

The effect of highly concentrated dyebaths and high temperatures is naturally to force color onto the more aggressive fiber, rayon. Logically, therefore, lower concentrations and temperatures are indicated as the starting point for union work.

(*Continued on Page* 20)

Ten Years of Cotton Textiles

THIS survey is by the Association of Cotton Textile Merchants of New York, offered as a comparable and reasonably accurate record of the cotton textile industry during the past decade. Its application to specific classifications of product is not appropriate because the changes both in consumption and equipment have been irregular with respect to various kinds of goods. The data on plant equipment and its activity includes, necessarily, machinery and its operation in purely spinning mills, and in mills whose yarn is used for products other than woven goods, over 12 inches in width, such as twine, cordage, tape, knit goods, etc. Segregation of such data is not feasible in this tabulation and it is doubtful if such a division would seriously affect the relative value of the figures presented.

Demolition

Dismantling of equipment, begun in 1924, has been extreme during the past two years. From December 31, 1929, to December 31, 1931, over 2,200,000 spindles have gone out of existence. A further loss of 589,352 spindles in five months of 1932 bears witness that the process still continues. From the peak at the beginning of 1925, the total decline of spindles in place has been over 6,200,000, a loss of over 16 1-3 per cent. Spindles in place at the end of May, 1932 (31,737,174), are less than the average number of active spindles in every year from 1922 to 1927 save one.

Sans Replacement

New machinery installed has been too limited in respect to the total, for its increased effectiveness to be regarded as a major factor. As "spindles in place" include those that are built each year, these records show that a minimum of plant reconstruction is taking place.

Non-Competitive Spindles

The increase in idle spindles, or those which were not operated at all during the year, is likewise impressive. From an average of around three million idle spindles in previous years (1925-1929), the 1930 record indicates 3,296,000 and 1931 exceeds 4,628,000. Idle spindles represent equipment in permanently closed mills and partial equipment in other mills which has not been used during the year. This is usually a stage before removal or dismantling and it is doubtful if such equipment has great competitive importance.

Working Spindles

Capacity is more truly represented by the average number of spindles active during the year and their running time in hours. For 1931, the variation in such active spindles was from a high of 26,645,404 in April to a low of 24,637,864 in December. The monthly average of 25,674,107 was approximately seven million less than the average number of spindles active in 1925, and nine million under the figure for 1923. Further reduction during the current year varies from a high of 25,189,748 in February to a low of 21,639,352 in May. About 3,300,000 intermittent spindles during 1931 can be classed as potential working units which are ready to operate under propitious conditions. For instance, in April, 1931, one million of these intermittent spindles were being employed.

Yearly Activity

In spindle hour activity, the years 1930 and 1931 offer the expected contrast to the eight preceding years. The average annual operation for the years 1922-1929 ran over 95 billion spindle hours with only one year (1924) under 92,700,000 hours. The ten-year average 1922-1931 is 91,580,000,000 hours.

Fewer and Busier Spindles

The increase in activity for 1931 over 1930 (about one billion spindle hours) with considerably less equipment and a smaller proportion of it active, came about through added running time per average active spindles. The drastic decline of 472 hours per spindle in 1930 represents the industry's adjustment to economic conditions. Improvement in 1931 and depletion of stocks stimulated a regain of 217 hours per spindle. The Bureau of the Census estimates single shift for the year 1931 as 2,745 hours. Its calculations were based on an average of 8.91 hours per day from January through July and 8.93 per day for August to December.

Activity during the first five months of 1932 of 29,508,021,267 spindle hours compares with 33,338,695,913 hours in the similar period of 1931, gives assurance that continuous adjustment to current conditions is a settled policy of the industry and indicates no piling up of burdensome stocks to obstruct the progress of recovery.

Domestic Market

The domestic market is determined from statistics of annual production, corrected by adding imports and deducting exports. Our actual records of a large part of the industry are consistent in indicating that practically the same amount of goods are sold during the year's period as are produced. For the three years of 1929, 1930 and 1931, actual reports from mills covering over 50 per cent of total cloth production show the following relationship:

Production, 11,085,320,000 linear yards.

Shipments, 11,181,031,000 linear yards.

For eight years prior to 1930, the average annual domestic market for woven cotton goods was 7,554,000,000 square yards. In each of three years, 1923, 1927 and 1929 it exceeded eight billion square yards. During this entire period only one year fell below 7¼ billion square yards, which is slightly under the ten-year average of 7,293,164,000 square yards. In percentage relationship, 1930 consumption was 84.7 per cent of this average and 1931 reached 86.64 per cent.

More Customers With Less *Money*

The number of our customers naturally increases with the rise in population. Excepting radical changes in custom, which have not been of special significance during this period, gain in consumption depends on purchasing power as well as on the number of consumers. Since 1929, disturbed economic conditions have brought about a severe contraction in general income which has been reflected in a reduction of the per capita consumption of woven cotton cloth from an average of 65.3 yards in 1922-1929 to less than 51 yards for each of the years 1930 and 1931. The ten-year average is 62.19 square yards.

Around the Corner

Surely the textile wants of 125 million people are greater than those of 110 million were ten years ago. Any reasonable economic improvement should bring our per capita consumption up to the ten-year average. This would mean an annual domestic market of 7,773,750,000 square yards and, with average exports added, about 8,181,903,000 square yards. The making of such a yardage would require 95,693,653,000 spindle hours or 3,015 hours per year for each of the 31,737,174 spindles now in place.

Colorimeter and Method Employed in the Color Testing of Cotton *

BY DOROTHY NICKERSON

Color Technologist, Bureau of Agricultural Economics, U. S. Department of Agriculture, Washington, D. C.

IN solving the problem of color measurement for raw cotton standardization, a colorimeter has been developed by the color laboratory of the Bureau of Agricultural Economics in co-operation with the Keuffel & Esser Co. It has proved useful in measuring the color of many other agricultural products besides cotton—hay, meats, fruits and vegetables, butter, milk and cream, potatoes, etc., and although it is principally used in the textile field in relation to raw cotton, it may be applied to many other problems in textiles.

The instrument is different in method from that of other colorimeters. First, and very important, its results may be expressed in color terms, that is, in terms that express the color as it is seen—in terms which adequately approximate the phychological color attributes: hue, brilliance, and chroma. Second, the instrument may be adjusted at will to measure either a large or a small area. Third, it measures the average color of a highly variegated sample as easily as it measures a uniform color. Fourth, it has a unique method of illumination by cross lighting. And fifth, the instrument is quick and easy to operate and calibrate.

The method is simple in principle. The color of a sample is measured by varying the proportion of several color disks until the average color of the disks matches the color of the sample. The percentage areas of the disks exposed when the match is made are used to convert the color areas into terms approximating hue, brilliance, and chroma (defined in the Colorimetry Report of the Optical Society of America as hue, brilliance, and saturation). This is readily done by the use of disk mixture of Munsell papers.

The instrument is so constructed that the disk mixture is obtained by a moving optical wedge which collects the light from the exposed areas of the disks, thus allowing the disks themselves to remain stationary except as moved by the operator in order to adjust the relative areas exposed by the disks.

For textiles it seems generally useful to expose an area 4 inches in diameter for measurement. The area, however, may be increased to 12 inches in diameter by the use of an added lens, or reduced to a 1-inch diameter by the removal of these lenses.

The light from the sample is brought through a series of lenses, through the photometric cube, to be focused on the exit pupil. The light from the standard comparison disks is mixed by a revolving wedge and directed to the photometric cube, where its direction is changed, to be focused also upon the exit pupil. The sample field is uniform in color since the image seen is that of the cube, not of the sample itself.

The illumination is supplied by two lamps which are so placed that they are in a horizontal plane with the center of the sample and in a vertical plane with the center of the disks. Movie projection lamps, 50 volt prefocus base, having four coiled filaments in the same plane, are used in the instrument. The light given off at right angles to the plane of the four filaments is greater than that in the same direction when the lamp is rotated through 90 degrees. By adjusting the lamps, the bases of which are provided with a slot and screw for this purpose, the light on the sample surface may be made equal to that on the disk surface. Such a method of light adjustment provides for darkening such samples as are too light to be measured with available disks, and lightening such sampes as may be too dark to measure.

Tables have been prepared for use with several sets of disks in order to eliminate the calculation of hue, brilliance, and chroma from the disk areas. These tables do not cover the entire range of the spectrum colors as would be necessary in indiscriminate matching of textile samples, but it is hoped that such a series will be completed within a short time.

The precision with which observations may be made has been calculated for several observers. These figures have been published, together with observations regarding toleranees, training of observers, and color blindness in reports published by the Bureau of Agricultural Economics and may be obtained upon application.

*Paper presented at the Thirty-fifth Annual Meeting of the American Society for Testing Materials, at Atlantic City, N. J.

Cotton Twine Bill Passed

Washington.—Southern members of Congress, led by Representatives Bulwinkle and Senator George, of Georgia, won their fight for cotton twine for use in the Postoffice Department. Cotton and jute producers have been in a spirited competition over postoffice twine contracts for years. The postoffice bill passed by the Senate contains a provision inserted by Senator George saying special "consideration to the domestic article where the raw material of which it is made is grown in the United States and the article itself is manufactured in the U. S."

This, in effect, gives cotton twine makers and cotton growers an advantage. Heretofore the jute people have won with lower prices.

Hickory and other twine manufacturers have been trying to get twine awards from the Postoffice Department.

The Postoffice Department bill must go through a conference committee before it is sent to the President.

Parker Memorial Service

John W. Arrington, Jr., of Greenville, S. C., president of the Union Bleachery, as president of the Greenville Rotary Club, presided at the exercises attending the dedication of a memorial to the late Thomas F. Parker, textile magnate and philanthropist of that city, June 28. The memorial is a stone lodge containing rocks from every nation in the world and situated in the mountains near the North Carolina-South Carolina boundary.

Dr. E. W. Sikes, president of Clemson College, delivered the principal address, while J. W. Norwood, Greenville banker, closely identified with the textile industry in South Carolina and the South, traced the accomplishments of Mr. Parker.

L. P. Hollis, superintendent of the Parker district, which is made of schools in textile communities adjacent to Greenville, was general chairman of the program committee.

PERSONAL NEWS

James McDowell is to be manager of the new mohair and woolen mill to be built at New Braunfels, Tex.

W. B. Shannon has accepted the position of overseer of weaving at the Victor plant of the Victor-Monaghan Mills, Greer, S. C.

Thayer P. Gates, textile specialist, has been added to the executive staff of the Riverside and Dan River Cotton Mills, Danville, Va. At one time he was resident manager of the Sayles Bleachery and in recent years has been a consulting specialist in New York.

J. C. Williams has resigned as superintendent of the Spencer Corporation, Spindale, N. C., after having filled that position for the past 14 years, to become general superintendent of the Green River Mills, Inc., Tuxedo, N. C., and the Pisgah Cotton Mills, Brevard, N. C., to take effect July 15.

W. M. Sherard, of Hendersonville, N. C., has been elected president of the Green River Mills, Inc., which takes over the Green River Manufacturing Company, Tuxedo, N. C., and general manager for the Pisgah Cotton Mills, Brevard, N. C. He retired as superintendent of the mills at Whitmire, S. C., some years ago and since that time has made his home in Hendersonville.

J. Fred Welch, formerly a member of the firm of Welch & Brookshire, Charlotte, is now operating as "J. Fred Welch," handling the same line of textile machinery and supplies, his address being Box 763, Charlotte.

The firm of Welch & Brookshire was dissolved on June 23, J. Fred Welch and V. G. Brookshire mutually agreeing to the dissolution.

W. C. Appleton has been appointed general sales manager of the Viscose Company. Mr. Appleton succeeds George O. Hamlin, whose resignation was effective July 1 and whose assistant he has been for the past few years.

Mr. Appleton is particularly well known in Eastern mill circles, having served at one time as assistant to the treasurer of the Whitman Mills in New Bedford and later having been in charge of the Providence office of the Viscose Company. He was graduated from Harvard in 1917 and served in the Army during the war.

In 1920 he joined the Whitman Mills, staying with them until 1932, when he went to Philadelphia as a member of the selling force of Harding, Tilton & Co. Early in 1925 Mr. Appleton joined the Viscose Company. After six months in the New York office he went to Providence to take charge of that office. Four years ago he returned to New York as Mr. Hamlin's assistant.

Mr. Hamlin, retiring sales manager, plans to spend the next few months at his summer home in Maine. A pioneer in the American rayon industry, he became associated in 1905 with the Philadelphia concern which was the Viscose Company's predecessor in the field.

Association Board Meets

The Board of Government of the American Cotton Manufacturers' Association held a meeting at Charlotte last Friday morning, with B. B. Gossett, president, presiding. The session was executive in character and no statement regarding it was made public. It was understood that Association business, with particular reference to the work of the organization this year, was discussed.

South Carolina Association Meeting

The annual meeting of the Cotton Manufacturers' Association of South Carolina will be held at Grove Park Inn, Asheville, N. C., on July 8 and 9.

The meeting will open with a banquet at 8 p. m. Friday, with W. S. Nicholson, president, as toastmaster. The principal address will be by Dr. H. N. Snyder, president of Wofford College.

Following the banquet, there will be a style show in cottons under the auspices of the Cotton-Textile Institute co-operating with two Asheville stores, the show to be followed by a dance.

The Saturday morning session will feature the address of President Nicholson and will be followed by an executive business session.

Guests of honor at the convention will be B. B. Gossett, president American Cotton Manufacturers' Association; K. P. Lewis, president Cotton Manufacturers' Association of N. C.; Norman Elsas, president Cotton Manufacturers' Association of Ga.; Irving Southworth, president National Association of Cotton Manufacturers; Geo. A. Sloan, president Cotton-Textile Institute; W. G. Query, chairman Tax Commission of S. C.

OBITUARY

WALTER S. DILLING

Walter S. Dilling, 51, prominent textile manufacturer and banker of Kings Mountain, died in a Charlotte hospital Tuesday after a critical illness of two weeks. He had been in declining health for the past six months.

Mr. Dilling was born in the town of Kings Mountain in 1881 and was the son of the late Capt. Fresno Dilling and Sallie Ann Falls Dilling. He received his education in the local city schools and at Erskine College. He was cashier of the Kings Mountain Bank prior to his entrance into the textile business with his father fifteen years ago.

At the time of his death he was vice-president of the Dilling Cotton Mills of Kings Mountain. Mr. Dilling was a life-long member of the Boyce Memorial A. R. P. church and was a deacon in that church. He was president of the Men's Bible Class in its Sunday school. He was a member of all the Masonic bodies and a member of the Knights of Pythias.

He was married to Miss Mary Emilyn Simonton on September 30, 1903, who survives, together with two children, Mrs. B. W. Gillespie, of Kings Mountain, and Robert F. Dilling, of Greenville, S. C. In addition to the children one sister, Mrs. Cora D. Hunter, of Kings Mountain, and one half-sister, Mrs. Mollie B. Falls, of Bowling Green, S. C., also survive.

FRED W. PANGLE

Charlotte, N. C.—Fred P. Pangle, who for the past 17 years had been employed by the Southern Spindle & Flyer Co., was drowned in the Catawbab River on Sunday morning. He fell from a boat while baiting a trot line. Mr. Pangle, who was well known to many textile men in this section, is survived by his widow and five children.

The Wealth of America

(Collier's Weekly)

THERE'S no argument in this editorial. It's merely a collection of facts, incontrovertible, eloquent facts that confound those who profess to see America slipping down into a state of effortless despair.

America's mutual savings bank deposits are $1,233,000,000 higher than they were at the peak of the boom three years ago.

Total bank savings today exceed $29,000,000,000, equal to more than $1,000 for every family in the land.

Savings depositors number 52,000,000, nearly two per family.

The number of Americans owning stock has increased almost 40 per cent since 1929.

A group of 102 companies which had 5,539,036 stockholders at the end of the boom year had 7,675,143 stockholders at the beginning of this year.

One company alone today has over 665,000 stockholders, a gain of more than 195,000 since the boom. This company (American Telephone & Telegraph) has assets exceeding $3,200,000.

No other nation on the face of the earth can show such widespread ownership of money and stocks.

Our total stock of gold is $4,000,000,000. No other country ever possessed so much. Britain, for example, has only $588,000,000.

Currency in circulation aggregates $5,464,000,000, or $700,000,000 more than in the boom.

A recent offering of $450,000,000 of U. S. Treasury securities elicited subscriptions totaling $4,196,296,700—more than nine times the amount offered.

Last year $16,500,000,000 worth of new life insurance was written.

Total insurance now carried is estimated at $109,000,000,000, or not far short of $1,000 for every man, woman and child in the United States.

Policies in force total 127,800,000.

One company alone (Metropolitan) has in force many more policies (44,520,810) than there are families in America.

Such safeguard, such security is enjoyed by the people of no other nation in the world.

Our total national wealth, estimated at $329,700,000,000, is greater than that of a dozen Continental European countries combined.

The income of the American people comfortably exceeds $1,000,000,000 a week.

The per capita income here is far greater than in any other land.

There are still six or seven persons gainfully employed for every person idle.

Foreigners owe American investors approximately $18,000,000,000. In addition foreign governments owe our government $7,000,000,000 and we are still selling abroad more than we are buying.

No fewer than 25,800,000 automobiles are owned by Americans—almost one for every family.

This total is almost three times the number owned by all the rest of the world.

Americans possess far more telephones (19,500,000) than all other countries put together.

Radios continue to multiply. The latest authoritative computation puts the total at over 16,545,000, representing an investment of more than $1,600,000,000, also a record unapproached by any other people.

How many new domestic mechanical refrigerators have been bought, would you guess? A grand total of fully 3,750,000, at an estimated expenditure approaching $2,000,000,000. And most of these have been installed in the last three years. In no other part of the globe do half as many homes enjoy such a luxury—Americans are still rapidly coming to regard it as a necessity.

America has more home owners than any other nation.

A recent survey of 29 typical small towns revealed that 71 per cent of the inhabitants owned their homes, that 88 per cent had electric light, 72 per cent had baths, 51 per cent had electric washers, 55 per cent had radios, 41 per cent had vacuum cleaners.

There are more families in America than in any other land that can afford to and do send their children to high school and college.

In no other land do so many average families have the means to enjoy foreign travel.

Expansion in airplane travel—the most costly of all common forms of overland transportation—has been greater here than abroad during recent times.

The theater of the masses, the movie, still attracts a weekly average attendance of 75,000,000.

Our so-called national "luxury" bill is still away up in the billions a year.

It took a billion and a quarter pounds of candy to satisfy our sweet tooth in 1931—no decrease from the 1929 total.

The percentage of our agricultural population who, despite deflation, are acquiring domestic comforts, conveniences, labor-saving devices, improved machinery, the use of better roads, is constantly increasing.

Today more than 700,000 farms are electrified, representing an increase of 400 per cent in eight years, and the total is being swelled rapidly.

In industrial communities hard manual toil is being steadily abolished by the introduction of machinery. Each American worker now has at his command five horsepower, a record not even remotely approached outside our boundaries.

The average working-day a generation ago was ten to twelve hours. The standard in this generation is eight hours, with the trend running towards a still shorter work-day.

The work-week used to consist of six (even seven) days. Now it is five and one-half days, with the five-day week coming into vogue.

America has always recovered from periods of depression and pressed forward to new heights of prosperity.

Never in the past was America so well equipped as it is today to resume an epochal forward march. Not only have we changed from a debtor nation to the greatest creditor nation on earth, not only have we vaster national wealth, not only have we an unprecedented supply of gold, but we are richer in experience, richer in inventive brains, richer in scientific knowledge, richer in machinery, richer in productive facilities, richer in managerial skill, richer in discovered mineral and oil resources, richer in tansportation facilities by land and air and water, richer in every material wealth-creating product and process, richer in craftsmanship, richer in everything. . . .

Clip this page out of Collier's and put it in your pocket. It will bear rereading many times this summer

(*Continued on Page* 18)

The Cotton Outlook

(Weekly Letter of Bond, McEnany & Co.)

TRANSACTIONS in the cotton futures markets have been in relatively small volume during the past fortnight, as indeed has been the case for fully two months past. Activity has been held in check, at least in this country, by the persistent weakness of the stock market, by more or less serious banking troubles in the Central West, by the failure of business in general to show perceptible improvement, by the uncertainties attendant upon the nominating conventions of both great political parties, and, as regards cotton in particular, by the continued severe depression of the American cotton industry and cotton goods trade. Nevertheless, cotton prices have displayed what under the highly adverse conditions must be deemed remarkable steadiness, not plunging to new low levels, as the majority of the trade were inclined to expect, but slowly and hesitatingly creeping upward from the middle of June onward. On June 10 July contracts in New York made a new low for all time, whether for contract deliveries or for basis middling cotton in New York, at 4.91 cents per pound; but since that date the price level has reluctantly risen until as this is written (June 29) July contracts, at 5.41 cents per pound, have scored an advance of a full one-half cent from the season's low, and later deliveries in New York are at the highest levels touched since the beginning of June.

So far as cotton itself is concerned, the firming up of the price in the face of rather pronouncedly bearish financial and business conditions is perhaps to be explained in part as due to a growing feeling in the trade that the reported intensity of boll weevil infestation over fully three-quarters of the entire cotton area of the South indicates the possibility of much greater damage to the coming American crop from this cause than has been experienced for nearly a decade past—i.e., since the historic "boll weevil years" 1921, 1922 and 1923. Uneasiness on this score has undoubtedly induced considerable price fixing of outstanding "call" commitments on the part of domestic and European spinners, some covering of future requirements by scattered individuals of the same class and perhaps a certain amount of tentative buying by courageous speculative investors. As against this buying the holders of free cotton in the South have been reluctant sellers, this being especially true of those more resolute farmers who have so far been able to withhold from the market some 2,000,000 bales of last year's crop, being determined to carry such cotton over into the new crop year rather than sacrifice it at the ruinous prices now obtainable. The trade statistics show clearly that the quantity of cotton which has moved from the plantations to market during the past two months of severely depressed prices is relatively insignificant, the exports and domestic spinners' takings for the period having been chiefly derived from stocks already accumulated at the ports and interior towns. Inasmuch as more than one-half of these stocks—some 3,750,000 bales out of a total of about 7,000,000 bales—is at present held off the market by the Federal Farm Board, the American Cotton Co-operative Association and the Department of Agriculture, while most of the remainder is owned either by exporters or by merchants who have hedged it by sales of future contracts, possible offerings from this source have become too small to have a depressing effect upon prices when even a moderate demand is in evidence.

What has just been said about the existing cotton price situation should perhaps be supplemented by the observation that some recent happenings in the domain of commodity prices certainly raise the question whether powerful economic forces are not at last coming into play to halt the prolonged downward tendency of commodity prices in general and to cause the price curve to turn in an upward direction. It is a noteworthy fact that in each of the past two weeks the wholesale price index computed by the National Fertilizer Association showed a rise, the advance for the fortnight being nine fractional points—i.e., from 59.6 to 60.5. As regularly happens when the price movement turns sharply, the gain has not been uniform for all prices—a few, indeed, registering fresh declines—but is largely attributable to the effect upon the price average of almost spectacular advances for certain commodities. Thus the price of raw sugar in bond at American ports has risen more than 50 per cent during the past month. Even more significant, since Government interference cannot here be charged, is an advance of more than 40 per cent in the price of hogs at packing centers in the United States and an almost equivalent advance in the price of beef cattle. Throughout the long list of commodities, in fact, the number of instances of price advances, rather than of price declines, is gradually becoming more noticeable, and the inference would appear warranted that the economic influences which have operated to produce such advances will in no long time make themselves felt with respect to the lagging commodities as well.

In this connection it seems well to remark that the world's monetary gold situation is now manifestly becoming such that the price-enhancing effect for commodities of the recent unprecedented increase of the total stock of gold available for monetary and credit purposes the world over cannot probably long be delayed. In the midst of the amazing international scramble for gold which has marked the depression period up to the present time attention has been almost entirely diverted from two fundamental facts and the long-run consequences certain to flow from them. The first of these facts is that never before in all history has so huge an addition to the world's monetary gold supply been made in so short a time as during the past year and a half, the gain for the period being over $1,000,000,000, or not far from three times the normal rate of gain. The second fact is that history does not record a single instance of a sudden and extraordinary increase of the world's supply of monetary gold which has not been followed in a comparatively brief time by an extensive rise of commodity prices. The significance of these facts is for the moment obscured by the highly irrational manner in which governments and national banks of issue, not to speak of a multitude of lesser banks and individuals the world over, have of late sought to get possession of gold in preference to all other forms of property, thereby "freezing" international credit and throttling international trade. Since, however, gold of itself is a useless and unfruitful possession, its possessors must some time put it to use, the more so when they see the supply of gold continually increasing, as it now is, and its value correspondingly diminishing. When that time comes, the effect of the present enormous stocks of monetary gold upon commodity prices is likely to be felt with great suddenness and violence, fully justifying

the often expressed opinion of such economists as Professor Kemmerer that economic analysis clearly points to a return to the commodity price level of the years immediately preceding the panic of 1929.

As regards the rapidity with which the tendencies mentioned above manifest themselves in the movement of the price of cotton much will of course depend upon the size of the coming American crop. At the moment the thinking of the trade is largely dominated by the probable magnitude of the carry-over at the end of the current season—now generally estimated as about 13,250,000 bales—and by apprehension lest the inadequately reduced acreage which the farmers are believed to have planted will make the total supply for the coming season oppressively large. The question of the acreage will be definitely settled by the preliminary estimate to be issued by the Department of Agriculture on July 8, and no more need be said here upon the subject than that the trade now generally expects an official acreage figure showing a reduction of about seven per cent from last year's planted area. Whatever the acreage proves to be, crop reports so far indicate that from the standpoint of plant growth and development the crop is fully up to the average of recent years, although complaints are not lacking from various important producing areas, some to the effect that excessive rainfall during the second half of June has caused a sappy growth of the plants and rendered them more susceptible to poor weather conditions later on, others to the effect that inadequate fertilization is already showing its effects in the puny development of the plants and their poor promise of fruiting capacity. In one highly important respect, however, boll weevil infestation, the outlook for the crop has become progressively worse of late. Such rates of boll weevil infestation per acre as are now being reported both by official entomologists and by private observers in all the States that have hitherto suffered seriously from this pest are quite without parallel even in the worst boll weevil years of the past. It is evident, therefore, that the rapid multiplication of the insects must quickly be checked by prolonged dry and hot weather if the average yield per acre is not to fall much below that of the past ten years.

Cotton As Insulating Material

Experiments in the production of insulating material consisting in part of low grade cotton or linters suggest an important new use for cotton among many ideas lately advanced for stimulating the consumption of the present surplus.

According to the New Uses Section of the Cotton-Textile Institute, insulating board of this type has been satisfactorily and economically manufactured on an experimental basis by Raph Grayson, of Atlanta, Ga., the inventor and holder of patent rights on this idea. This new product is now being tried out in containers for the shipment of "dry ice" and several selected products requiring refrigeration in transit. The marketing of frozen foodstuffs and other perishables is engaging the attention of various industries and while still in its infancy, appears to have possibilities for material expansion. Its development obviously will create a continuing demand for millions of feet of insulating board with opportunity for the new cotton-filled board to demonstrate its efficiency and economy.

Superiority of cotton for insulating purposes is demonstrated by tests of the U. S. Bureau of Standards which show that it is in the front rank of fibrous materials having lowest heat conductivity. Manufacturing costs reported to the Institute indicate that cotton board can be produced cheaper than several types of board using other material for insulation.

The Institute is also informed that the process of manufacture will not require expensive equipment, as ordinary pickers, shredders, and condensers will form cotton or lint into the batts which lay in the corrugations of the fibre board to improve its insulating qualities. A rigid, or a flexible board can be produced capable of withstanding great wear and tear.

Present production plans are directed toward meeting first the demand for container material for dry ice shipments. Household refrigerators of all types, refrigerated railroad cars and other fields where an efficient insulating material is required offer opportunities of real magnitude for the future expansion of this new use for cotton.

Vandals Cut Warps in Mill

Damage estimated at several thousand dollars was caused at the Chadwick-Hoskins Mill No. 3, at Twelfth street, late Thursday night when vandals entered the building and seriously damaged the warps on more than 500 looms in the mill.

W. J. Duggan, superintendent, said that repairs will require about three weeks and that the mill will be forced to close for that length of time.

Police who were called to conduct an investigation and officials of the mill believe the damage to the warps was done by former employees of the company or at least by a group led by a man who was familiar with the interior of the mill. Four men have been arrested.

The night watchman at the plant told police that he heard noises in the mill shortly after 11 o'clock, investigated and discovered the damage. The warp on each of the 501 looms in the four loom rooms had been cut. He notified police immediately and an investigation showed that the mill had been entered through a window, the vandals having broken a pane and released the window latch.

Union Organizer Charged With Conspiracy to Fire Worker's Building

Spartanburg, S. C.—John Peel, organizer for the United Textile Workers of America, was arrested here on charges of conspiracy and aiding and abetting in setting fire to R. H. Minton's garage about 1 a. m. last Friday morning.

Tom Rampley, 21, and H. F. Garmon, 30, are jointly charged with Peel in the conspiracy warrant and are charged in a separate warrant with actually setting fire to the garage. Peel is named in a separate warrant charging him with "aiding, abetting, counseling and procuring Tom Rampley and H. F. Garmon to set fire to and attempt to burn the garage."

Minton, who resides between Drayton community and Boiling Springs, has been working in the Arcadia Mills, where about 150 operatives are on strike, and has daily brought several workers to the mill with him in his automobile, according to officers.

George Clark, 37-year-old Arcadia Mills striker, was arrested and charged with assault and battery with intent to kill during an altercation in which he is alleged to have fired one shot from a pistol at Frank Wallace, mill worker.

SOUTHERN
TEXTILE BULLETIN

Member of
Audit Bureau of Circulations and Associated Business Papers, Inc.
Published Every Thursday By
CLARK PUBLISHING COMPANY
Offices: 118 West Fourth Street, Charlotte, N. C.

DAVID CLARK ..... *Managing Editor*
D. H. HILL, JR. ..... *Associate Editor*
JUNIUS M. SMITH ..... *Business Manager*

SUBSCRIPTION

One year, payable in advance	$2.00
Other Countries in Postal Union	4.00
Single Copies	.10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

Thinking of Yesterdays

We are thinking of those days when women gathered around the mill doors on Saturdays in order to get the pay envelopes away from their husbands before they reached the bar rooms up town.

We are thinking of the wan and tired looking women and pitiful and hungry children who appear at mill offices every Monday morning with the same old story, that the husband had not meant to waste all of his pay, but had come home drunk and without a cent and that there was no food in the house.

We are thinking about the operatives who were always missing on Monday mornings and of those who appeared with shaky nerves and of the inefficient work of many who could hardly keep going.

We are thinking of the days when the State sold whiskey in South Carolina and the dispensaries, as they were called, stunk into high Heaven because of the graft and corruption which surrounded them.

We are thinking of 1913, during which we made an accurate check, and probably of other years, when over half of the superintendents changed jobs, most discharges being for excessive drinking.

We are thinking of many of the greatest of the old-time superintendents who toppled from high positions because of whiskey.

We are thinking of one of the most pitiful spectacles we ever saw, the appearance at our office of a man, the one-time top notch superintendent of the South, but a victim of whiskey, and of his pleading with us to get him a job as second hand in carding or even as a card grinder.

We are thinking of the fact that from the day whiskey was outlawed, the saving deposits of the working people began to climb, and we are also thinking of the modern propaganda to the effect the greatest of all economic losses, the pouring of a dollar's worth of whiskey down a man's throat is justified if it produces two cents worth of tax money.

We are thinking of the twenty-five or more men we have seen sprawling, dead drunk, in gutters within one block of the center of the City of Charlotte, and of the fact that ladies did not dare to come up town on Saturday afternoon because of the multitude of intoxicated men.

We are thinking of drunken and shouting farmers starting home on Saturday afternoons with horses on a dead run, and we are wondering what would have happened had they been driving automobiles.

We are thinking of the several times we have heard pistols crack and seen bloody men plunge through the swinging doors of bar rooms and fall upon sidewalks.

We are thinking of the political rings operated by the owners of bar rooms and of the elections won by the use of liquor and are doubting if the modern gangster is much worse.

We are thinking of the days when the burden of misery and suffering and wrecked lives became so great that even the influence and money and whiskey of the bar room rings could not stem the tide and when in the record-breaking time of two years forty-six of the forty-eight States confirmed a constitutional amendment approving the outlawing of whiskey.

We are thinking of the fact that as lax as has been prohibition enforcement and as bad as have been conditions recently, no constructive suggestion has been brought forward and nothing better has been offered.

We are thinking how we would like to get the advocates of the repeal of prohibition write out some of their statements and assertions and sign them, for there will be days when such statements must stand the test.

We are thinking and realizing that we are on our way back to the day of the dispensary and ultimately the bar room, and remembering the past we know that in our cotton mills there are men who will go down and there are women and little children who must suffer.

We are thinking of the better conditions which came to mill operatives as the result of prohibition and of worse conditions which will come again as the result of the return of whiskey.

We are mindful of the increase in drunken-

ness and immorality among the so-called upper strata of society, but our interests are of those of the cotton mill employees of the South and as we compare their condition today with those of dispensary and bar room days we take our stand absolutely upon the side of prohibition, fully realizing that we are championing a losing cause and one which is, for the moment, exceedingly unpopular.

A Significant Statement

Bond, McEnany & Co., in their weekly letter, make the following statement:

> Never before in all history has so huge an addition to the world's monetary gold supply been made in so short a time as during the past year and a half, the gain for the period being over $1,000,000,000 or more than three times the normal rate of gain. History does not record a single instance of a sudden and extraordinary increase in the world's supply of monetary gold which has not been followed, in a comparatively brief time, by an extensive rise in commodity prices.
>
> The effect of the enormous stocks of monetary gold upon commodity prices is likely to be felt with great suddenness and violence, fully justifying the oft expressions of Professor Kemmerer and other economists that economic analysis clearly points to a return to the commodity price level of the years immediately preceding the price levels of 1929.

The above statement coming from such a house as that of Bond, McEnany & Co. is significant.

In 1929 unbounded optimism blinded every one to the coming collapse.

It is possible that the deep pessimism of 1932 may be blinding men to the possibility of materially higher commodity prices.

Union Labor Disorders

John Peel, organizer for the United Textile Workers at Spartanburg, S. C., and two other men have been arrested, charged with setting fire to the garage of R. H. Milton.

Mr. Milton's only offense was that he drove two workers to a mill at which there was a strike.

It is the same John Peel who assisted in managing the strike at Marion, N. C., in which five men were killed.

George Clark, a striker operating under the organization of John Peel, has also been arrested charged with firing a shot at Frank Wallace, a mill worker.

The United Textile Workers is a branch of the American Federation of Labor, and at Spartanburg, just as at Marion, N. C., they are guilty of greater disorders and are showing a greater disregard for the rights of others, than did the Communists at Gastonia, N. C.

Men have a right to strike but men also have a right to refuse to strike, and to continue to enter their chosen place of employment free from molestation.

The United Textile Workers can never justify themselves in burning the garages and shooting at men who refuse to obey the orders of union bosses.

Methodist Parasites

Bishop Francis J. McConnell and Rev. Harry F. Ward announced recently that the Methodist Federation for Social Service, of which they are President and Secretary, respectively, and from which they receive salaries, "has continued to co-operate with boards and agencies within their own church and with many groups outside the church working definitely for a new social order. Among these may be mentioned several departments of the Federal Council of Churches, the American Civil Liberties Union, the League for Industrial Democracy, Labor Research Association, International Labor Defense, Committee on Militarism in Education, Fellowship of Reconciliation."

Thus are the Methodists, of whom our editor is one, forced to contribute to and co-operate with Communist, Socialist, Pacifist, Defeatist, Anti-American organizations.

The Wealth of America

Elsewhere in this issue we are reprinting an editorial from Collier's Weekly entitled "The Wealth of America" which they designate as "a collection of facts."

We commend the reading of their statement, as it gives a remarkable picture of the real situation of the United States, which is much different from that generally imagined.

No Connection With Anti-Syndicalism Movement

Certain parties are securing subscriptions for the purpose of conducting a publicity campaign in several Southern States for anti-syndicalism laws, and from letters which we have received we judge that some mills seem to think that we are connected with the effort.

We wish to state, emphatically, that we have absolutely no connection, either directly or indirectly, with the movement, and that neither of the parties doing the soliciting have been connected with us since January, 1931.

MILL NEWS ITEMS

MONTGOMERY, ALA.—Bradford Cotton Mills recently purchased the Hermas improved automatic shearing machine through Carolina Specialty Company, Charlotte.

GREENSBORO, N. C.—Mock, Judson, Voehringer Company recently purchased five additional Sipp-Eastwood winders through Carolina Specialty Company, Charlotte.

HUNTSVILLE, ALA.—Plans are being made for the reopening of the Seidman Braid and Fabric Company, which has been idle for the past six months. There is a possibility that the plant may be moved to Chattanooga.

UNION, S. C.—The Buffalo plant of Union-Buffalo Mills has resumed full time after being closed a month.

ANDERSON, S. C.—The Anderson Cotton Mills, which have been closed during the month of June, announced that they have no intention of reopening until market conditions improve.

SPARTANBURG, S. C.—The Pacolet Manufacturing Company of Spartanburg, S. C., and New Holland, Ga., the Whitney Manufacturing Company of Whitney, S. C., and the Gainesville Cotton Mills of Gainesville, Ga., which have been closed down since June 1, announced that they intend to remain closed during the month of July.

HIGH POINT, N. C.—One of the major units of the Adams-Millis Corporation Corporation will resume day and night production after having been on a half-time basis for several months.

HIGH POINT, N. C.—The Stehli Silks Corporation, operating here one of the largest mills in the world for the exclusive manufacture of broad silks, will go on a day and night production schedule this week, it was learned authoritatively, although mill officials would make no statement regarding their plans other than that they hope to furnish as much employment as possible for their workers.

NASHVILLE, TENN.—The Shelbyville Mills, Inc., has filed a petition in voluntary bankruptcy in the U. S. District Court here. The company operates large cotton mills at Shelbyville, Tenn.

The Hunter Manufacturing and Commission Company of New York is chief creditor, with a claim of $1,204,000. Other claims are small. Assets scheduled exceed liabilities.

A. F. Mullins, Jr., of Shelbyville, has been appointed receiver.

HUNTSVILLE, ALA.—The Lowe Manufacturing Company, Huntsville, and the Shelbyville Mills, Inc., Shelbyville, Tenn., reorganization is expected to proceed at once and both textile plants which are now closed may resume on full-time operations by early fall, following the recent filing of bankruptcy petitions in Birmingham and Nashville. Assistant Treasurer A. F. Mullins, Jr., of the Lowe Mills, has been appointed receiver for the two companies. A meeting of the creditors is set for July 8 in the office of Bankruptcy Referee Jere Murphy.

MILL NEWS ITEMS

COOLEEMEE, N. C.—With the Erwin Mills here resuming full-time operations, the completition of a number of additions and repainting the 400 cottages in the mill village business here is on the upward turn.

The mill now has a payroll of about $12,000 a week. The plant has operated at almost full time for the past year, and with orders for delivery on hand, the management plans to continue the present full-time schedule indefinitely.

GASTONIA, N. C.—Gastonia is to have a new textile plant in the very near future, but details rfegarding its exact character and the identity of the firm which is to operate it are not available at ths time.

Plans have been made and work will be commenced in the immediate future on a building to house this mill. It will be erected by the A. M. Smyre Manufacturing Company, on its property at Ranlo, east of the city, and in close proximity to that firm's mills Nos. 1 and 2. It is understood that the Smyre interests are erecting the building for an out-of-town firm which has leased it. It is to be a one-story brick structure and will be ready for occupancy the first of September. The building is to cost between $10,000 and $15,000. It will house machinery for finishing yarns, though no definite information could be had as to the exact nature.

HENDERSONVILLE, N. C.—W. M. Sherard has resigned as mayor of Hendersonville, N. C., to re-enter the textile manufacturing field as president and treasurer of the Green River Mills, Inc., and also manager of the Pisgah Cotton Mills at Brevard, succeeding W. C. Bobo. Mr. Sherard for several months, as receiver, has operated the Green River Mills, Inc. Subsequently the property was sold for $42,800 and reorganization effected, with him as president and treasurer. Other officers are G. F. Williams of Greenville, S. C., vice-president, and W. E. Bates, secretary. Approximately $20,000 worth of repairs and improvements will be made at the Green River plant in the immediate future, Mr. Sherard announces.

Mr. Sherward was for many years superintendent of the Glenn-Lowry Mills, Whitmire, now of the Aragon-Baldwin group, and is a past president of the Southern Textile Association.

NEW BRAUNFELS, TEX.—Plans are rapidly materializing for operation here of the first mohair and woolen mill in Texas to be capitalized at $300,000 and to manufacture men's and women's wear goods at first and ultimately woolen blankets. James McDowell, graduate of Manchester, England, Tech and once director of research at North Carolina State College, will manage the mill.

Associated with Mr. McDowell in the project are Harry Wagenfuehr, president of the New Braunsfels Chamber of Commerce, and Bailey Jones, secretary, and John H. Cunningham, San Antonio attorney. Mill is likely to be in operation by next February to utilize part of the spring mohair and wool clip from west central Texas.

Site has access to both Comal and Guadalupe rivers. Mr. McDowell has been associated for the last five years with successful operation of the Bluebonnet Mills.

The Wealth of America

(*Continued from Page* 11)

when politicians invite you to tear your hair over the state of the country. The country is all right. What we need is less hysteria and more confidence and courage.

Research By Nopco Staff

Nopco technical men are carrying out the newly-established policy of the National Oil Products Company, Harrison, N. J., of serving the users of sulphonated, emulsifiable and soluble oils by industries rather than by territorial locations, as is the general practice. In the textile industry, T. A. Printon and Dr. D. S. Chamberlin are visiting Southern and Mid-Western mills and consulting them on their manufacturing problems. Dr. C. I. Post is aiding tanneries, paper mills and glue factories in the Mid-Western States with his technical advice. Other Nopco technical men are touring New England and the Middle Atlantic States, each devoting his energies exclusively to the particular industry or division of industry which he is most qualified to serve.

Aberfoyle Increases Prices

Philadelphia, Pa.—On July 15 the Aberfoyle Manufacturing Company will increase its selling prices on the basis of 60s-2 combed peeler Durene cones to the extent of 5 cents a pound, and other numbers proportionately. This action is in line with Aberfoyle's public statement of June 16 in which customers were notified that if the demand for Aberfoyle's product did not increase, a price advance would become necessary.

Clemson Textile Teachers Take Additional Training

Five teachers in the Textile Department of Clemson College are taking graduate work during the summer vacation. A. E. McKenna and L. R. Booker are taking work at the University of Tennessee. H. S. Tate and J. L. Brock are continuing their work at the George Peabody College for Teachers, Nashville, Tenn., while A. R. Macormac, of the Textile Chemistry and Dyeing Division, is sutdying at Columbia University, New York City.

Clemson Cotton Grading Course

The Clemson Textile Department had a most successful summer course in cotton grading. Some 32 men consisting of local buyers, cotton classers, and mill superintendents were enrolled in the cotton grading course. This course is given each summer at the Clemson Textile Department in co-operation with the U. S. Department of Agriculture. The class this year was taught by H. C. Robertson, cotton specialist of the U. S. Department of Agriculture.

New Orleans.—Secretary Hester, of the New Orleans Cotton Exchange, said Saturday United States exports to foreign countries, exclusive of Canada, totaled 410,578 bales during June, again 240,710 bales in June, 1931. Great Britain received 71,725 bales, against 15,505 last year; France, 20,588, against 8,407; Germany, 80,902, against 65,538, and the rest of Europe, 84,070, against 55,995; the Orient and Mexico, 153,473, against 95,765.

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Cotton and Rayon Goods Exports in Britain Show Increase

Washington.—British exports of cotton and rayon mixed piece goods are running more than a third heavier than a year ago, according to a report to the Department of Commerce from the American Sonsulate in London.

Exports for the first four months, the department was advised, amounted to 3,656,868 square yards more than in the same period of 1931, an increase of 38.66 per cent. With the sole exception of British South Africa, it was stated, all of the British markets for this material are purchasing more than they were a year ago, shipments to British India being 385 per cent greater; Netherlands, 139 per cent; China, 57 per cent.

Seasonal Dullness In Gray Cloths

"The gray goods market for the early part of the week appeared to be conforming to the normal super-dullness characteristic of all business at this season, but toward the close, owing to the continued advance in cotton and news of further mill curtailment, inquiry and business became brisk, though not yet extensive in volume," Woodward, Baldwin & Co. reported at the week-end.

"In print cloths, where sales of 64x60s and 68x72s had been heard of at less than 3c and 3½c, respectively, no more were available below these figures, and some mills were withdrawing from the market.

"Carded broadcloths in the 100x60 4.10 construction are firm at 4c, with deliveries beyond July hard to secure at less than 4⅛c; 36½-inch 80x60 5-yard goods are firm for spot delivery at 3½c.

"There was more inquiry for sheetings, with prices firmer at the end of the week.

"General business activity has slackened somewhat during the week, as we approach the dullest two weeks' period in the year, July 1-15, but in gray goods we anticipate some improvement in demand unless the Democratic Presidential nominee in Chicago proves disappointing to the Eastern wing of the party."

Rob Store Safe

Spartanburg, S. C.—Robbers who worked with a heavy shop hammer and steel pick early this morning smashed open the safe in the storeroom of the Pacific Mills' general store at the Lyman plant, in this county, and escaped with about $350 in currency. Sheriff Henry has arrested a white man, Osborne Brown, in the Lyman community, who is held as a suspect. The box in which the money was kept was found in the rear of the store.

Faster Dyed Rayon and Cotton Goods

(*Continued from Page* 6)

All substantive dyestuffs including the developed group, when used in quantities of four ounces or less per 100 pounds material, exhibit greater affinity for cotton than for rayon. In quantities between four and twelve ounces, the affinity for both fibers is reasonably uniform when applied with proper temperature control. In greater quantities the affinity for rayon is greater than for cotton and the difference increases as the quantity of dyestuff used increases.

Regardless of the quantity of dyestuff used, the affinity for the rayon increases with increased temperature, the maximum affinity being reached between 200 and 212 degrees Fahenreit.

The addition of salt to assist exhaustion increases the relative quantity of dyestuff absorbed by the rayon compared with that absorbed by the cotton and this difference increases as the quantity of salt used is increased and regardless of temperature variation.

These being generally accepted facts it is obvious that temperatures between 200 and 212 degrees Fahrenheit assist the uniformity of absorption by both fibers when the quantity of dyestuff used is small, whereas medium to full shades are more uniformly absorbed at lower temperatures, 120 to 160 degrees Fahrenheit.

More Complete Range of Colors Available

It is unfortunate from all points of view that a more complete range of colors similar to the Stilbene types is not available. These are more uniformly absorbed by cotton and rayon in greater concentration than other substantive dyestuffs and in medium to dark shades can be advantageously used for filling the cotton. However, they are only available in yellow and orange and do not discharge satisfactorily.

In conclusion, may I once more emphasize the importance of color selection as a means to the end of production of faster colors on rayon-cotton goods, rather than any revolutionary changes in new dyestuffs or application methods. The question of cost which admittedly is a vital one at the present time has not been discussed and it naturally must have some influence on the choice of color and method.

Better quality, however, invariably means higher production cost in any manufacturing project. Those who are willing to sacrifice quality for cost provided that the product merits quality, are courting nothing but embarrassment.

To a large extent color makes a fabric and therefore the color should at least equal the fabric's life.

Asbestos Textiles

(*Continued from Page* 4)

only at a very slow rate. At 1,000 degrees (540 degrees C.) about one-fourth of it has been driven off, but at this point it begins to go more rapidly so that above 1200 degrees F. (650 degrees C.) it will quickly disappear entirely. After the water of hydration has been driven off the fiber becomes completly calcined and can be crushed to a powder. The length of time during which the fiber is subjected to a given temperature has very little effect, the temperature itself being the important factor.

Asbestos has also been called an insulator against heat. This is also slightly erroneous. Asbestos in solid form is not an insulator but will transmit heat. When woven

into a fabric its insulating qualities are almost negligible if applied directly to the source of heat. As an example, a piece of asbestos cloth laid on a metal plate having a temperature of 900 degrees F. (480 degrees C.) reduced the temperature above the cloth only 35 degrees F. (19 degrees C.) However, asbestos in cloth or other forms does furnish a strong heat-resisting medium around which insulation in the form of enclosed air spaces, for instance, can be built.

In order to give the reader some idea of the temperatures which the various grades of asbestos textiles will safely stand, the following may be stated as a general rule: grade A-1 and grade A, 350 to 400 degrees F. (175 to 205 degrees C.); grade AA, 600 degrees F. (315 degrees C.); grade AAA, 850 degrees F. (455 degrees C.); and grade AAAA, 950 degrees F. (510 degrees C.) These figures must be considered as applying to plain asbestos yarns and cloths without impregnation coating, or treatment of any kind. Special severe conditions may reduce these limits, and, reversely, ideal conditions of service may greatly increase them.

Reference was made previously to iron-free and acid-resisting asbestos fibers. In most chrysotile asbestos, iron is found in both ferrous oxide Fe_2O_3 and free magnetic iron Fe_3O_4. In some cases where asbestos is used as an insulating wall on electrical wires, the free magnetic iron is objectnioable, and for this work a fiber, such as Arizona, Australian, and one type of African, which is free from this form of iron, must be used.

3—Asbestos Textiles

With the exception of the brown and blue African fibers, asbestos is attacked by acids in about the same degree as cotton fibers. From a commercial standpoint weak acids seem to have more effect on the fiber than concentrated acids, except under boiling temperatures, where the action is much increased. In strong hot acid solutions chrysotile asbestos will lose over 50 per cent of its weight. Blue African asbestos stands supreme in acid resistance with a maximum loss of approximately 20 per cent, and the brown African amosite ranks second. Alkalies at ordinary temperatures, up to 20 per cent strength, have no effect on asbestos, and very little effect beyond that.

The chief outlet for asbestos textiles today is as the raw material for the manufacture of other products such as brake linings and packings, but there is an ever-growing market for asbestos yarns, cloths, and tapes in their primary form to be found in their use on insulated wires, goves, clothing, theatre curtains, filters, conveyor belts, etc. In fact, wherever a soft, pliable, yet strong, heat-resisting medium is needed there is a market for asbestos textiles.

For centuries asbestos was but a curiosity, a mystic mineral. Today, with its possibilities for being spun, woven, felted or molded into useful form, it is a recognized necessity in our modern-day world.

COTTON GOODS

New York.—With a large number of mills closed down and the general observance of the holiday in the market, there was little trading in cotton goods last week. It is estimated that production for the current week will not exceed 40 per cent. It is indicated also that mills on print cloths, broadcloths and narrow sheetings will continue their policy of half-time operations until September.

Demand for gray goods continued light and was generally confined to spot and nearby requirements. Prices were somewhat easier as the week opened, but showed more firmness as cotton advanced.

At the week's close there was a change for the better in various sections of the primary textile market. Principal among the changes was that coarse yarn gray cotton goods quarters had changed over from the quietest condition to be one of more activity and few better prices. Fine goods gray cloth market men were just beginning to feel the way ahead once more. Wide goods, though on a nip and tuck scramble for orders at low prices, felt the good effects in some cases of throwing shortage and curtailment influences.

Irregular conditions still continue on some of the finished goods lines, notably sheets and pillow cases, towels, and some of the blanket lines. With the closing of inventories for the half year this week a firmer market and some slight increase in buying is anticipated soon after the holiday.

One of the encouraging features of the week was that fine gray goods were more settled after having been disturbed for some weeks by the rayon situation. A moderate amount of business was done and there is a promise of more active trade in this division.

Cotton goods prices were as follows:

Print cloths, 38-in., 64x60s	2⅝
Print cloths, 27-in., 64x60s	2⅝
Gray goods, 38½-in., 64x60s	6¼
Gray goods, 39-in., 80x80s	4⅝
Gray goods, 39-in., 68x72s	3¾
Brown sheetings, 31yard	5⅛
Brown sheetings, 4-yard, 56-60s	4½
Brown sheetings, standard	5½
Tickings, 8-ounce	11
Denims	9½
Dress ginghams	9a10½
Standard prints	6¼
Staple ginghams	6

YARN MARKET

Philadelphia, Pa.—Business in yarns for spot and prompt delivery was somewhat better last week, although the average order was small. Yarn consumers were less hesitant to buy at the very low prices now prevailing. There was virtually no buying for future delivery. Reports in this market showed that spot supplies of some counts of knitting yarns are becoming scarce.

Spinners subscribe to the proposal they are selling very much less yarn than if they were willing to meet quotations which, it is stated, mean a loss for sellers. But they solace themselves with the belief the spinners doing business at a loss simply are paving the way for their passing out.

Spinners' margins in both carded and combed are smaller than for any time in recent years. There are indications, especially in knitting counts, that stocks have been well liquidated.

No changes were made by the leading quality spinners. They were maintaining their quotations furnished to buyers a week ago. No effort was made to withhold naming them that they would be swayed in favor of low levels instead of favoring better grades. At least, this often enough happened to divide business in favor of those ostensibly selling at a loss.

Only the most trivial quantities were covered on by the insulating, carpet, narrow fabrics, lace and kindred buyers. In each case there was a lack of definiteness in quotations. There were too many occasions when those who thought they had gone too low to book commitments with their spinners fund they were underquoted by others. Because of this it became somewhat more difficult to estimate the exact value of any yarn number.

Scattered selling of combed numbers was reported. Since what were called market prices were made there was little change in the situation. There was a good deal more interest in thread numbers, sought at new low prices. Knitters showed more interest in mercerized, but as yet they are willing to buy only in very small quantities.

Southern Single Warps

10s	13
12s	13½
14s	14
16s	14½
20s	15
26s	18
30s	19

Southern Two-Ply Chain Warps

8s	12½
10s	13
12s	13½
16s	15
20s	15½
24s	17½
30s	19½
36s	25
40s	26
40s ex.	28½

Southern Single Skeins

8s	12½
10s	13
12s	13½
14s	14
16s	14½
20s	15
26s	18
30s	19
30s ex.	20½

Southern Two-Ply Skeins

8s	12½
10s	13
12s	13½
14s	14
16s	14½
20s	15½
24s	17½
26s	18½
30s	19½
40s	25
40s ex.	28
50s	32
60s	36

Duck Yarns, 3, 4 and 5-ply

8s	13
10s	13½
12s	14
16s	15
20s	16

Carpet Yarns

Tinged Carpet, 8s, 3 and 4-ply	11½
Colored Strips, 8s, 3 and 6-ply	14
White Carpet, 8s, 3 and 4-ply	12½

Part Waste Insulating Yarn

8s, 1-ply	11
8s, 2, 3 and 4-ply	11
10s, 1-ply and 3-ply	12½
12s, 2-ply	13
16s, 2-ply	14
20s, 2-ply	14½
26s, 2-ply	17
30s, 2-ply	18½

Southern Frame Cones

8s	13
10s	13
12s	13½
14s	14
16s	14½
18s	15
20s	15½
22s	16½
24s	17½
26s	18½
28s	19
30s	19
30s	18½

SOUTHERN SOURCES OF SUPPLY

for Equipment, Parts, Materials, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in the SOUTHERN TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information, service, equipment, parts or materials, and believe this guide will prove of real value to our subscribers.

AKRON BELTING CO., Akron, O. Sou. Reps.: L. L. Haskins, Greenville, S. C.; L. F. Moore, Memphis, Tenn.

AKTIVIN CORP., The, 50 Union Square, New York City. Sou. Rep.: American Aniline Products, Inc., 1003 W. Trade St., Charlotte, N. C.

AMERICAN ENKA CORP., 200 Madison Ave., New York City. Sou. Reps.: R. J. Mebane, Asheville, N. C.; Cannon Mills (Yarn Dept.), Kannapolis, N. C.

AMERICAN MOISTENING CO., Providence, R. I. Sou. Plants: Atlanta, Ga., and Charlotte, N. C. Sou. Offices: 1331 W. Morehead St., Charlotte, N. C.; 240 N. Highland Ave., Atlanta, Ga.; 711 Woodside Bldg., Greenville, S. C. Sou. Reps.: W. I. Burgess and C. A. Burgess, Greenville Office; Marvin McCall, Charlotte Office; J. D. Johnson and W. L. Johnson, Atlanta Office.

ARABOL MFG. CO., THE, 110 E. 42nd St., New York City. Sou. Agent: Cameron McRae, Concord, N. C.; Sou. Reps.: W. C. Gibson, Griffin, Ga.; W. L. Cobb, Greenville, S. C.

ARNOLD, HOFFMAN & CO., INC., Providence, R. I. Sou. Office: Independence Bldg., Charlotte, N. C., Robert E. Buck, Mgr. Sou. Reps.: Frank G. North, P. O. Box 844, Atlanta, Ga.; Frank W. Johnson, P. O. Box 1354, Greensboro, N. C.; R. A. Singleton, 2016 Cockrell Ave., Dallas, Tex.; R. E. Buck, Jr., 8 Tindel Ave., Greenville, S. C.

ASHWORTH BROS., INC., Charlotte, N. C. Sou. Offices: 44-A Norwood Place, Greenville, S. C.; 215 Central Ave., S.W., Atlanta, Ga.; Texas Rep., Textile Supply Co., Dallas, Tex.

BAHNSON CO., THE, Reynolds Bldg., Winston-Salem, N. C. Sou. Reps.: Smith Williams, Winston-Salem, N. C. Sou. Reps.: S. C. Stimson, 164 Oakland Ave., Spartanburg, S. C.; I. L. Brown, 886 Drewery St., N.E., Atlanta, Ga.; J. C. Sevier, 1400 Duncan Ave., Chattanooga, Tenn.

BARBER-COLMAN CO., Rockford, Ill. Sou. Office: 31 W. McBee Ave., Greenville, S. C.; J. H. Spencer, Mgr.

BARKLEY MACHINE WORKS, Gastonia, N. C. Chas. A. Barkley, president.

BRIGGS-SHAFFNER CO., 600 Brookstown Ave., Winston-Salem, N. C. P. O. Box 188, Salem Station. S. A. Harris, Mngr., W. H. Parks, Sales Mngr.

BORNE, SCRYMSER CO., 17 Battery Place, New York City. Sou. Reps.: H. L. Siever, P. O. Box 240, Charlotte, N. C.; W. B. Uhler, 608 Palmetto St., Spartanburg, S. C.

BROWN CO., DAVID, Lawrence, Mass. Sou. Reps.: Ralph Gossett, Woodside Bldg., Greenville, S. C.; Belton C. Plowden, Griffin, Ga.; Gastonia Mill Supply Co., Gastonia, N. C.; Russell A. Singleton, Dallas, Tex.

BROWN & CO., D. P. 259-261 N. Lawrence St., Philadelphia, Pa. Sou. Rep.: Newlin W. Pyle, Charlotte, N. C.

BUFFALO ELECTRO-CHEMICAL CO., Inc., Sta. B., Buffalo, N. Y. Sou. Warehouses, Union Storage & Warehouse Co., Charlotte, N. C.;; Quaker City Chemical Co., Knoxville, Tenn.; Sou. Office, 1800 Belvedere Ave., Charlotte, N. C.

BUTTERWORTH & SONS CO., H. W., Philadelphia, Pa. Sou. Office: Johnston Bldg., Charlotte, N. C., J. Hill Zahn, Mgr.

CAMPBELL & CO., JOHN, 75 Hudson St., New York City. Sou Reps.: M. L. Kirby, P. O. Box 432, West Point, Ga.; Mike A. Stough, P. O. Box 701, Charlotte, N. C.; A. Max Browning, Hillsboro, N. C.

CHARLOTTE LEATHER BELTING CO., 302 E. Sixth St., Charlotte, N. C. Fred R. Cochrane, Mgr. Sou. Reps.: W. H. Fortson, 110 Tusten St., Elberton, Ga.; Russell A. Singleton, 2016 Cockrell Ave., Dallas, Tex.; W. P. McAnulty and W. E. Strane, Charlotte Office.

CIBA CO., INC., Greenwich and Morton St., New York City. Sou. Offices: 519 E. Washington St., Greensboro, N. C.; Greenville, S. C.

CLINTON CORN SYRUP REFINING CO., Clinton, Iowa. Sou. Reps.: J. W. Pope, Box 490, Atlanta, Ga.; Luther Knowles, Hotel Charlotte, Charlotte, N. C.

CORN PRODUCTS REFINING CO., 17 Battery Place, New York City. Sou. Office: Corn Products Sales Co., Greenville, S. C. Stocks carried at convenient points.

CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass. Sou. Office: 301 S. Cedar St.; S. B. Alexander, Mgr.

DARY RING TRAVELER CO., Taunton, Mass. Sou. Rep.: John E. Humphries, P. O. Box 843, Greenville, S. C.; Chas. L. Ashley, P. O. Box 720, Atlanta, Ga.

DILLARD PAPER CO., Greensboro, N. C. Sou. Reps.: E. B. Spencer, Box 1281, Charlotte, N. C.; R. E. McLeod, Box 1142, Columbia, S. C.; G. N. Wilson, care Ponce de Leon Hotel, Roanoke, Va.

DIXIE SPINDLE & FLYER CO., Charlotte, N. C. A. M. Guillet, Mgr.

DRAKE CORPORATION, Norfolk, Va.

DRAPER CORPORATION, Hopedale, Mass. Sou. Rep. E. N. Darrin, Vice-Pres.; Sou. Offices and Warehouses, 242 Forsyth St., S.W., Atlanta, Ga., W. M. Mitchell; Spartanburg, S. C., Clare H. Draper, Jr.

DU PONT RAYON CO., 2 Park Ave., New York City. Sou. Plants: Old Hickory, Tenn., A. Kunsman, Mgr.; Richmond, Va., W. Shackleford, Mgr. Sou. Reps.: F. H. Coker, Dist. Sales Mgr., 611 Johnston Bldg., Charlotte, N. C.; F. F. Hubach, Dist. Sales Mgr., 609 Provident Bldg., Chattanooga, Tenn.

DU PONT DE NEMOURS & CO., E. I., Wilmington, Del. Sou. Office, 302 W. First St., Charlotte, N. C., John L. Dabbs, Mgr. Sou. Warehouse: 302 W. First St., Charlotte, N. C., Wm. P. Crayton, Mgr. Sou. Reps.: D. C. Newman, L. E. Green, H. B. Constable, Charlotte Office; J. D. Sandridge, 1021 Jefferson Std. Bldg., Greensboro, N. C.; B. R. Dabbs, 715 Provident Bldg., Chattanooga, Tenn.; W. R. Ivey, 111 Mills Ave., Greenville, S. C.; J. M. Howard, 135 S. Spring St., Concord, N. C.; W. P. Crayton, Ralston Hotel, Columbus, Ga.; J. A. Franklin, Augusta, Ga.; R. M. Covington, 715 Provident Bldg., Chattanooga, Tenn.

EATON, PAUL B., 218 Johnston Bldg., Charlotte, N. C.

ECLIPSE TEXTILE DEVICES, Elmira, N. Y. Sou. Reps.: Eclipse Textile Devices Co., care Pelham Mills, Pelham, S. C.; Eclipse Textile Devices Co., care Bladenboro Cotton Co., Baldenboro, N. C.

EMMONS LOOM HARNESS CO., Lawrence, Mass. Sou. Rep.: George F. Bahan, P. O. Box 581, Charlotte, N. C.

FIDELITY MACHINE CO., 3908 Franklin Ave., Philadelphia, Pa. Sou. Rep.: E. A. Cordin, Philadelphia Office.

FIRTH-SMITH CO., 161 Devonshire St., Boston, Mass. Southern Rep., Wm. B. Walker, Jalong, N. C.

FORD CO., J. B., Wyandotte, Mich. Sou. Reps.: J. B. Ford Sales Co., 1147 Hurt Bldg., Atlanta, Ga.; J. B. Ford Sales Co., 1915 Inter-Southern Life Bldg., Louisville, Ky; J. B. Ford Sales Co., 1405 Whitney Bldg., New Orleans, La. Warehouses in all principal Southern cities.

FRANKLIN PROCESS CO., Providence, R. I. Southern Franklin Process Co., Greenville, S. C., B. S. Phetteplace, Mgr. Central Franklin Process Co., Chattanooga, Tenn., C. R. Ewing, Mgr.

GASTONIA BRUSH CO., Gastonia, N. C. C. E. Honeycutt, Mgr.

GENERAL DYESTUFF CORP., 230 Fifth Ave., New York City. Sou. Office & Warehouse, 1101 S. Blvd., Charlotte, N. C., B. A. Stigen, Mgr.

GENERAL ELECTRIC CO., Schenectady, N. Y. Sou. Sales Offices & Warehouses: Atlanta, Ga., E. H. Ginn, Dist. Mgr.; Charleston, W. Va., W. L. Alston, Mgr.; Charlotte, N. C., E. P. Coles, Mgr.; Dallas, Tex., L. T. Blaisdell, Dist. Mgr.; Houston, Tex., E. M. Wise, W. O'Hara, Mgrs.; Oklahoma City, Okla., F. B. Hathaway, B. F. Dunlap, Mgrs. Sou. Sales Offices: Birmingham, Ala., R. T. Brooke, Mgr.; Chattanooga, Tenn., W. O. McKinney, Mgr.; Ft. Worth, Tex., A. H. Keen, Mgr.; Knoxville, Tenn., A. B. Cox, Mgr.; Louisville, Ky., E. B. Myrick, Mgr.; Memphis, Tenn., G. O. Mcfarlane, Mgr.; Nashville, Tenn., J. H. Barksdale, Mgr.; New Orleans, La., B. Willard, Mgr.; Richmond, Va., J. W. Hicklin, Mgr.; San Antonio, Tex., I. A. Uhr, Mgr. Sou. Service Shops: Atlanta, Ga., W. J. Seibert, Mgr.; Dallas, Tex., W. F. Kaston, Mgr.; Houston, Tex., F. C. Bunker, Mgr.

GENERAL ELECTRIC VAPOR LAMP CO., Hoboken, N. J. Sou. Reps.: Frank E. Keener, 187 Spring St., N.W., Atlanta, Ga.; C. N. Knapp, Commercial Bank Bldg., Charlotte, N. C.

GREENSBORO LOOM REED CO., Phone 5071, Greensboro, N. C. Geo. A. McFetters, Mgr., Charlotte, N. C. Phone 4255, E. J. McFetters, Supt., E. A. Hill, representative, 238 Oakland Ave., Spartanburg, S. C.

GILL LEATHER CO., Salem, Mass. Sou. Reps.: Ralph Gossett, 904 Woodside Bldg., Greenville, S. C.; Hammer & Kirby, Gastonia, N. C.; Belton C. Plowden, Griffin, Ga.

GOODYEAR TIRE AND RUBBER CO., INC., THE, Akron, Ohio. Sou. Reps.: W. C. Killick, 205-207 E. 7th St., Charlotte, N. C.; P. B. Eckels, 141 N. Myrtle Ave., Jacksonville, Fla.; Boyd Arthur, 713-15 Linden Ave., Memphis, Tenn.; T. P. Stringer, 500-6 N. Carrollton Ave., New Orleans, La.; E. M. Champion, 709-11 Spring St., Shreveport, La.; Paul Stevens, 1609-11 First Ave. North, Birmingham, Ala.; B. S. Parker, Jr., Cor. W. Jackson and Oak Sts., Knoxville, Tenn.; E. W. Sanders, 209 E. Broadway, Louisville, Ky.; H. R. Zierach, 1225-31 W. Broad St., Richmond, Va.

HALTON'S SONS, THOS., "C" and Clearfield, Philadelphia, Pa. Sou. Rep.: Dennis J. Dunn, P. O. Box 1261, Charlotte, N. C.

HART PRODUCTS CORP., 1440 Broadway, New York City. Sou. Reps.: Chas. C. Clark, Box 274, Spartanburg, S. C.; Samuel Lehrer, Box 265, Spartanburg, S. C.; W. G. Shull, Box 923, Greenville, S. C.; O. T. Daniel, Textile Supply Co., 30 N. Market St., Dallas, Tex.

HAYWOOD, MACKAY & VALENTINE, INC., New York City. Sou. Office: Reynolds Bldg., Winston-Salem, N. C., T. Holt Haywood, Mgr.

HERMAS MACHINE CO., Hawthorne, N. J. Sou. Rep.: Carolina Specialty Co., P. O. Box 520, Charlotte, N. C.

HINDE & DAUCH PAPER CO., THE, Sandusky, Ohio. Sou. Office, Plant and Reps.: P. O. Box 1538, Richmond, Va., S. K. Taylor, Mgr. C. A. Van Wagner, Sou. Rep., Hotel Robert E. Lee, Winston-Salem, N. C.

HOUGHTON & CO., E. F., 240 W. Somerset St., Philadelphia, Pa. Sou. Reps.: J. M. Keith, 525 Rhodes-Haverty Bldg., Atlanta, Ga.; Jas. A. Brittain, 820 Comer Bldg., Birmingham, Ala.; Porter H. Brown, P. O. Box 656, Chattanooga, Tenn.; H. J. Waldron and D. O. Wylie, P. O. Box 663, Greensboro, N. C.; R. J. Maxwell, P. O. Box 1241, Greenville, S. C.; G. F. Davis, 418 N. 3rd St., St. Louis, Mo., for New Orleans, La.

HOWARD BROS. MFG. CO., Worcester, Mass. Sou. Office and Plant: 244 Forsyth St., S.W., Atlanta, Ga., Guy L. Melcher, Mgr. Sou. Reps.: E. M. Terryberry, 208 Embassy Apts., 1613 Harvard St., Washington, D. C.; Guy L. Melcher, Jr., Atlanta Office.

HYRGOLIT, INCORPORATED, Kearny, N. J. Southern Reps.: J. Alfrel Lechler, 519 Johnston Bldg., Charlotte, N. C.; Belton C. Plowden, Griffin, Ga.

ISELIN-JEFFERSON CO., 328 Broadway, New York City. Sou. Reps.: C. F. Burney, 5631 Willis Ave., Dallas, Tex.; E. C. Malone, 1013 Glenn Bldg., Atlanta, Ga.

JOHNSON, CHAS. B., Paterson, N. J. Sou. Rep.: Carolina Specialty Co., Charlotte, N. C.

KEEVER STARCH CO., Columbus, Ohio. Sou. Office: 1200 Woodside Bldg., Greenville, S. C., Daniel H. Wallace, Sou. Agent. Sou. Warehouses: Greenville, S. C., Charlotte, N. C., Burlington, N. C. Sou. Rep.: Claude B. Iler, P. O. Box 1383, Greenville, S. C.; Luke J. Castle, 2121 Dartmouth Place, Charlotte, N. C.; F. M. Wallace, 2027 Morris Ave., Birmingham, Ala.

LAVONIA MFG. CO., Lavonia, Ga.

LOCKWOOD-GREENE ENGINEERS, INC., 100 E. 42nd St., New York City. Sou. Office: Montgomery Bldg., Spartanburg, S. C., R. E. Barnwell, V. P.

MANHATTAN RUBBER MFG. DIVISION OF RAYBESTOS-MANHATTAN, INC., Passaic, N. J. Sou. Offices and Reps.: The Manhattan Rubber Mfg. Div., 1108 N. Fifth Ave., Birmingham, Ala.; Alabama—Anniston, Anniston Hdw. Co. Co.; Birmingham, Crandall Eng. Co. (Special Agent); Birmingham, Long-Lewis Hdw. Co.; Gadsden, Gadsden Hdw. Co.; Huntsville, Noojin Hdw. & Supply Co.; Tuscaloose, Allen & Jemison Co.; Montgomery, Teague Hardware Co. Florida—Jacksonville, The Cameron & Barkley Co.; Miami, The Cameron & Barkley Co.; Tampa, The Cameron & Barkley Co. Georgia—Atlanta, Atlanta Belting Co.; Augusta, Bearing Parts & Supply Co.; Columbus, A. H. Watson (Special Agent); Macon, Bibb Supply Co.; Savannah, D. DeTreville (Special Agent). Kentucky—Ashland, Ben Williamson & Co.; Harlan, Kentucky Mine Supply Co.; Louisville, Graft-Pelle Co. North Carolina—Charlotte, Matthews-Morse Sales Co.; Charlotte, Charlotte Supply Co.; Fayetteville, Huske Hdw. House; Gastonia, Gastonia Belting Co.; Goldsboro, Dewey Bros.; High Point, Beeson Hdw. Co.; Lenoir, Bernhardt-Seagle Co.; Rockingham, Roy Walker (Special Winston-Salem, Kester Machinery Co. South Carolina—Anderson, Sullivan Hdw. Co.; Charleston, The Agent); Wilmington, Wilmington Iron Works; Cameron & Barkley Co.; Clinton, Industrial Cupply Co.; Columbia, Columbia Supply Co.; Greenville, Sullivan Hdw. Co.; Sumter, Sumter Machinery Co.; Spartanburg, Montgomery & Crawford. Tennessee—Chattanooga, Belting & Supply Co.; Johnson City, Summers Hdw. Co.; Knoxville, W. J. Savage Co.; Nashville, Buford Bros., Inc. Service Rep.: J. P. Carter, 62 North Main St., Greer, S. C. (Phone 186). Salesmen: E. H. Olney, 101 Gertrude St., Alta Vista Apts., Knoxville, Tenn.; C. P. Shook, Jr., 1031 North 30th St., Birmingham, Ala.

MARSTON CO., JOHN P. 247 Atlantic Ave., Boston, Mass. Sou. Rep.: C. H. Ochs, Hotel Charlotte, Charlotte, N. C.

MATHIESON ALKALI WORKS, INC., 250 Park Ave., New York City. Sou. Plant, Saltville, Va., E. A. Hults, V.-Pres. Sou. Office: First Nat'l Bank Bldg., Charlotte, N. C., Fred C. Tilson, Mgr. Sou. Reps.: E. M. Murray, E. M. Rollins, Jr., J. W. Ivey and B. T. Crayton, Charlotte Office; R. C. Staple, Box 483, Chattanooga, Tenn.; Z. N. Holler, 208 Montgomery St., Decatur, Ga.; J. W. Edmiston, Box 570, Memphis, Tenn.; V. M. Coates, 807 Lake Park, Baton Rouge, La.; T. J. Boyd, Adolphus Hotel, Dallas, Tex.

MAUNEY STEEL CO., 237 Chestnut St., Philadelphia, Pa. Sou. Reps.: Aubrey Mauney, Burlington, N. C.; Don L. Hurlburt, 511 James Bldg., Chattanooga, Tenn.

MERROW MACHINE CO., THE, 8 Laurel St., Hartford, Conn. Sou. Reps.: E. W. Hollister, P. O. Box 563, Charlotte, N. C.; R. B. Moreland, P. O. Box 895, Atlanta, Ga.

MORTON MACHINE WORKS, Columbus, Ga. Sou. Rep.: Carolina Specialty Co., Charlotte, N. C.

NATIONAL ANILINE & CHEMICAL CO., INC., 40 Rector St., New York City. Sou. Office & Warehouse: 201 W. First St., Charlotte, N. C., W. H. Willard, Mgr. Sou. Reps.: J. I. White, W. L. Barker, C. E. Blakely, Charlotte Office; J. T. Chase, Americans Savgs. Bk. Bldg., Atlanta, Ga.; H. A. Rodgers, 910 James Bldg., Chattanooga, Tenn.; J. E. Shuford, Jefferson Std. Life Bldg., Greensboro, N. C.; E. L. Pemberton, 342 Dick St., Fayetteville, N. C.

NATIONAL OIL PRODUCTS CO., Harrison, N. J. Southern Reps.: R. B. MacIntyre, Hotel Charlotte, Charlotte, N. C.; G. H. Small, 310 Sixth St., N.E., Atlanta, Ga.; Warehouse, Chattanooga, Tenn.

NATIONAL RING TRAVELER CO., 257 W. Exchange St., Providence, R. I. Sou. Office and Warehouse: 131 W. First St., Charlotte, N. C. Sou. Reps.: L. E. Taylor, Charlotte Office; C. D. Taylor, Sou. Agent, Gaffney, S. C.; Otto Pratt, Gaffney, S. C.; H. L. Lanier, Shawmut, Ala.; Roy E. Clemmons, 934 W. Peachtree St., Atlanta, Ga.

NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York City. Sou. Office, 601 Kingston Ave., Charlotte, N. C., Lewis W. Thomason, Sou. Dist. Mgr. Sou. Warehouses: Charlotte, N. C., Spartanburg, S. C., New Orleans, La., Atlanta, Ga., Greenville, S. C.

OAKITE PRODUCTS, INC., New York, N. Y. Sou. Div. Office and Warehouse, Atlanta, Ga., L. W. McCann, Div. Mgr., Atlanta, Ga.; E. Moline, Augusta, Ga.; R. H. Bailey, Memphis, Tenn.; H. J. Canny, Greensboro, N. C.; L. H. Gill, New Orleans, La.; W. A. McBride, Richmond, Va.; P. F. Wright, Chattanooga, Tenn.; J. C. Leonard, Div. Mgr., St. Louis, Mo.; W. B. Mix, Dallas, Tex.; C. A. Ormsby, Indianapolis, Ind.; G. C. Polley, Houston, Tex.; H. J. Steeb, St. Louis, Mo.; G. W. Tennyson, Peoria, Ill.; B. C. Browning, Tulsa, Okla.; R. M. Browning, Kansas City, Mo.; H. Bryan, Oklahoma City, Okla.; C. L. Fischer, St. Louis, Mo.

PERKINS & SON, INC., B. F., Holyoke, Mass. Sou. Rep.: Fred H. White, Independence Bldg., Charlotte, N. C.

PHILADELPHIA QUARTZ CO., 121 S. Third St., Philadelphia, Pa. Southern Reps.: Chas. H. Stone, Charlotte, N. C.; Paper Makers Chemical Corp., Atlanta, Ga.

PLATT'S METALLIC CARD CLOTHING CO., Lexington, N. C. U. S. Agent, F. L. Hill, Box 407, Lexington, N. C. Sou. Reps.: W. F. Stegall, Cramerton, N. C.; R. L. Burkhead, Varner Bldg., Lexington, N. C.

ROCKWEAVE MILLS, LaGrange, Ga., Wm. H. Turner, Jr., V.-Pres. and Gen. Mgr. Sou. Reps.: Carolina Specialty Co., Charlotte, N. C.; Hamner & Kirby, Gastonia, N. C.; J. M. Tull Rubber & Supply Co., 285 Marietta St., Atlanta, Ga.; Young & Vann Supply Co., 1725 First Ave., Birmingham, Ala.; Mills & Lupton Supply Co., Chattanooga, Tenn.; Nashville Machine & Supply Co., Nashville, Tenn.; Montgomery & Crawford, Spartanburg, S. C.; Sullivan Hdw. Co., Anderson, S. C.; Noland Co., Inc., Roanoke, Va.

SACO-LOWELL SHOPS, 147 Milk St., Boston Mass. Sou. Office and Repair Depot, Charlotte, N. C., Walter W. Gayle, Sou. Agent; Branch Sou. Offices: Atlanta, Ga., Fred P. Brooks, Mgr.; Spartanburg, S. C., H. P. Worth, Mgr.

SEYDEL CHEMICAL CO., Jersey City, N. J. Sou. Warehouse, Greenville, S. C. Sou. Reps.: W. T. Smith, Box 349, Greenville, S. C.; I. G. Moore, 301 N. Market St., Dallas, Tex.

SEYDEL-WOOLLEY CO., 748 Rice St., N.W., Atlanta, Ga.

SHAMBOW SHUTTLE CO., Woonsocket, R. I. Sou. Rep.: M. Bradford Hodges, Box 752, Atlanta, Ga.

SIPP-EASTWOOD CORPORATION, Paterson, N. J. Sou. Rep.: Carolina Specialty Co., Charlotte, N. C.

SIRRINE & CO., J. E., Greenville, S. C.

SOLVAY SALES CORP., 61 Broadway, New York City. Sou. Reps.: Chas. H. Stone, 822 W. Morehead St., Charlotte, N. C.; Burkhart-Schier Chemical Co., 1202 Chestnut St., Chattanooga, Tenn.; Woodward Wight Co., 451 Howard Ave., New Orleans, La.; J. A. Sudduth & Co., Birmingham, Ala.; Miller-Lenfesty Supply Co., Tampa, Miami and Jacksonville, Fla.

SONOCO PRODUCTS CO., Hartsville, S. C.

SOUTHERN SPINDLE & FLYER CO., Charlotte, N. C., Wm. H. Monty, Mgr.

STANLEY WORKS, THE, New Britain, Conn. Sou. Office and Warehouse: 552 Murphy Ave., S.W., Atlanta, Ga., H. C. Jones, Mgr.; Sou. Reps.: Horace E. Black, P. O. Box 424, Charlotte, N. C.

STEEL HEDDLE MFG. CO., 2100 W. Allegheny Ave., Philadelphia, Pa. Sou. Office and Plant: 621 E. McBee Ave., Greenville, S. C. H. E. Littlejohn, Mgr. Sou. Reps.: W. O. Jones and C. W. Cain, Greenville Office.

STEIN, HALL & CO., INC., 285 Madison Ave., New York City. Sou. Office, Johnston Bldg., Charlotte, N. C. Ira L. Griffin, Mgr.

TERRELL MACHINE CO., Charlotte, N. C., E. A. Terrell, Pres. and Mgr.

TEXTILE DEVELOPMENT CO., THE, 1001 Jefferson Standard Bldg., Greensboro, N. C. Sidney S. Paine, Pres. Ga.-Ala. Rep., Robert A. Morgan, Rome, Ga.

TEXTILE-FINISHING MACHINERY CO., THE, Providence, R. I. Sou. Office, 909 Johnston Bldg., Charlotte, N. C., H. G. Mayer, Mgr.

U S BOBBIN & SHUTTLE CO., Manchester, N. H. Sou. Plants: Monticello, Ga. (Jordan Division); Greenville, S. C.; Johnson City, Tenn. Sou. Reps.: L. K. Jordan, Sales Mgr., First National Bank Bldg., Charlotte, N. C.;

U. S. RING TRAVELER CO., 159 Aborn St., Providence, R. I. Sou. Reps.: Wm. P. Vaughan, Box 792, Greenville, S. C.; O. B. Land, Box 4, Marietta, Ga. Stocks at: Textile Mill Supply Co., Charlotte, N. C.; Charlotte Supply Co., Charlotte, N. C.; Gastonia Mill Supply Co., Gastonia, N. C.; Carolina Mill Supply Co., Greenville, S. C.; Sullivan Hdw. Co., Anderson, S. C.; Fulton Mill Supply Co., Atlanta, Ga.; Young & Vann Supply Co., Birmingham, Ala.

VEEDER-ROOT, INC., Hartford, Conn. Sou. Reps.: W. A. Kennedy Co., Johnston Bldg., Charlotte, N. C.; Carolina Specialty Co., 122 Brevard Court, Charlotte, N. C.

VICTOR RING TRAVELER CO., Providence, R. I. Sou. Offices and Warehouses: 615 Third National Bank Bldg., Gastonia, N. C., A. B. Carter, Mgr.; 520 Angier Ave., N.E., Atlanta, Ga., B. F. Barnes, Mgr. Sou. Reps.: B. F. Barnes, Jr., Atlanta Office: A. D. Carter and N. H. Thomas, Gastonia Office.

VISCOSE CO., Johnston Bldg., Charlotte, N. C., H. Wick Rose, Mgr.

WHITIN MACHINE WORKS, Whitinsville, Mass. Sou. Offices: Whitin Bldg., Charlotte, N. C., W. H. Porcher and R. I. Dalton, Mgrs.; 1317 Healey Bldg., Atlanta, Ga. Sou. Reps.: M. P. Thomas, Charlotte Office; I. D. Wingo and C. M. Powell, Atlanta Office.

WHITINSVILLE SPINNING RING CO., Whitinsville, Mass. Sou. Rep.: Webb Durham, 3020 East Fifth St., Charlotte, N. C.

Foreign Yarn and Cloth Sales Below Production

Yarn and cloth sales in foreign mill centers continue restricted and are probably less than production, according to the weekly reports of the New York Cotton Exchange Service.

"England," according to this authority, "says that renewed weakness in the yen is further handicapping Lancashire in competing with Japan in India and other Oriental markets. Buyers of English goods are holding off in anticipation of lower prices due to wage reductions in English spinning and weaving centers. The Lancashire Cotton Corporation has closed 43 mills. Germany cables that the trend in that country is still downward, but the recession is gradual. Italy reports to the same effect.

"France says that yarn production is very low, but the position of the mills as to stocks is better. Spain, on the other hand, expects a decline in mill activity from the current relatively good level, since stocks are reported to be accumulating. Poland sends more cheerful advices than other European countries, reporting the mill position good, with stocks small. Swedish mills likewise are doing relatively well. Japanese mills are maintaining their high rate of operations, although they report sales of yarn and cloth somewhat below output in the past two or three weeks, with spinning margins unremunerative."

Outlook Favors Business Recovery During Autumn Months

In its current review of business conditions in general, The Textile Organon, published by the Tubize Chatillon, states that "the outlook for this period, to date, is fairly optimistic, not so much as a result of the appearance of good factors, but more because of a lack of additional unfavorable news. At this time, for example, we sense a diminution of the extreme pessimism of the past few months. It is at least a 50-50 chance that the bottom of this business depression is occurring at the present time, and that some measure of recovery may be witnessed in the Fall."

"It seems to us," adds the publication, "that if the cause of this business depression were boiled down into one word, that word would be debt. Borrowings by individuals, the real estate mortgage situation, the frozen bank loans, the railroad dilemma, large government debts, war debts and reparations, tariffs set up to protect against debt, gold which measures debts, etc., are all recognized as the main irritants of the depression, yet they are all debts or are all tied very closely to debts themselves.

"How will the depression be ended? By an elimination of a large part of these debts in one way or another. Call it bankruptcy, composition, write-off adjustments, or default, many of the inflated debts now on the books will be discarded before this depression is finally completed."

Commenting upon conditions in the rayon industry the Organon says in part:

"Price continued to be the bogeyman n the rayon market during June. Following the cut in 150 denier viscose yarn from 75 cents to 65 cents on April 27th, new and additional 'inside prices' were quoted throughout the market during June.

"By June 20th, selling prices had again become so much below list prices that one company reduced the price of 150 denier viscose to 55 cents with the sole purpose in mind of clarifying this price situation. This effort to bring selling prices out into the open, and obliterate the 'inside deals,' was an attempt to honestly give the benefit of lower prices to all the trade instead of to just a favored few. This 'price cut to end price cuts' probably will hold, depending principally on renewed textile activity, and increased demand for rayon yarn in particular, during the next couple of months. It is a strange phenomena, indeed, to see rayon producers try to increase their business by the very method which is guaranteed to stop business, namely, price instability. Where this silly, downward cortex will lead, no one seems to know."

Durene Group Approves Results on Movement

Philadelphia.—A meeting of the Durene Association was held at the Penn Athletic Club for the purpose of putting additional weight behind the movement and to increase the scope of the New York office of the organization. President Arthur King presided and a full membership attended.

The result of the report of the advertising committee was received enthusiastically, it was stated, and it is generally believed that the committee's recommendations would be accepted.

CLASSIFIED ADS.

To Simplify Cones and Tubes for Yarn

Machinery manufacturers, makers of paper cones and tubes and spinners adopted a proposed simplified schedule of sizes and varieties of these items at a general conference in New York, held under the chairmanship of George Schuster, Division of Simplified Practice, Bureau of Standards.

The schedule will become effective January 1, 1933, if accepted by the majority of the trade. It was presented at the meeting by J. L. Coker, 3d, chairman of a simplified practice committee appointed in June, 1929, at a meeting of textile machinery manufacturers.

In attendance at the meeting were: Eugene H. Vaughn and W. H. Harriman, Universal Winding Co.; Ernest J. Laetsch, Botany Worsted Mills; J. B. Newton, Sipp-Eastwood Co.; P. I. Fletcher, Pairpont Corp., New Bedford; C. F. Chandler and George J. Groh, Acele Department, du Pont Rayon Co.; J. L. Coker, 3d, Sonoco Products; Willy Mayer, Hygrolit, Inc., Kearny, N. J.; L. N. Hyatt and Otto E. Karn of International Paper Co.; F. G. Boye, United States Testing Co.; G. B. Miller and S. T. Maltby, Platt & Co., Baltimore; Fred H. Diamond, Malina Yarns, Inc.,

Cotton Goods Market Unchanged

"The market has been extremely quiet this week, which is natural for this time of the year, and there has been very little change in prices. The most important demand has been on print cloths, 36-inch and narrower, for the bag trade. We have also noted some little further improvement on colored goods. More inquiry has developed this morning as result of the stronger cotton market for the last two days, and it is our opinion if cotton continues strong that a larger volume will result next week," the Hunter Manufacturing and Commission Company reports.

"The New York Federal Reserve Bank in their review report that sales of wholesale firms in this district averaged 26 per cent smaller in May than a year previous, the decline being slightly less than occurred in April. The decline in shoe sales was materially less than in April, and sales on stationery, drugs, cotton goods, silk goods and men's clothng all presented a more favorable showing than in April. Sales on cotton goods actually increased .6 per cent over April and stocks declined 11.19 per cent. Retail sales for May were 22.6 per cent less than in 1931, and stocks of merchandise on hand continued to show a substantial reduction from last year.

"With the continued drastic curtailment, which seems assured for at least another month, we are laying a strong foundation for better business and, while progress is extremely slow, we can see some signs of betterment."

Here are the Crucial Minutes

. . . *which the business paper helps to save*

"Mr. Smith," calls the secretary. The first of a line of waiting salesmen, hurriedly collecting hat and sample case, enters the buyer's office. A ground-glass door closes behind him. The other men shift, recross their legs and settle down to wait their turn. It won't be long now.

And it won't! For the average time given to salesmen is brief—heart-breakingly brief, sometimes. In retail stores it varies between 4 minutes in department stores and 21 minutes in furniture stores, with an average for all lines of 12 minutes per interview. In industrial concerns it is scarcely longer.

Yet within those few minutes every actual sale must be consummated. Here, within the walls of one room, across one desk, and in the space of a few hundred seconds are focused the entire efforts of management, production, advertising—to stand or fall on the result of personal salesmanship. Here are the crucial minutes when a man must *sell*. And because these selling minutes are so few, so precious, it is important to save them for actual selling, to free the hands of salesmen for the important work which can only be done face to face with the buyer.

It is here that the business paper is of untold value to the manufacturer. For it reaches *in advance* the man behind the ground-glass door. In its pages can be said beforehand everything that must be said as a preliminary to effective personal selling; to get introductions and explanations out of the way; to create friendships and reputations; to clear the decks for two-fisted selling.

Because the business paper of today deals so authoritatively and constructively with the problems of its industry, profession or trade, it not only passes through the ground-glass door, but it is read, thoroughly and attentively, by the man who constitutes the manufacturer's most important single objective. His interest makes the business paper the key to saving crucial selling minutes.

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